

2014

CITY OF REGINA

WATER AND SEWER UTILITY BUDGET

AS APPROVED BY CITY COUNCIL



City of Regina



REGINA
Infinite Horizons

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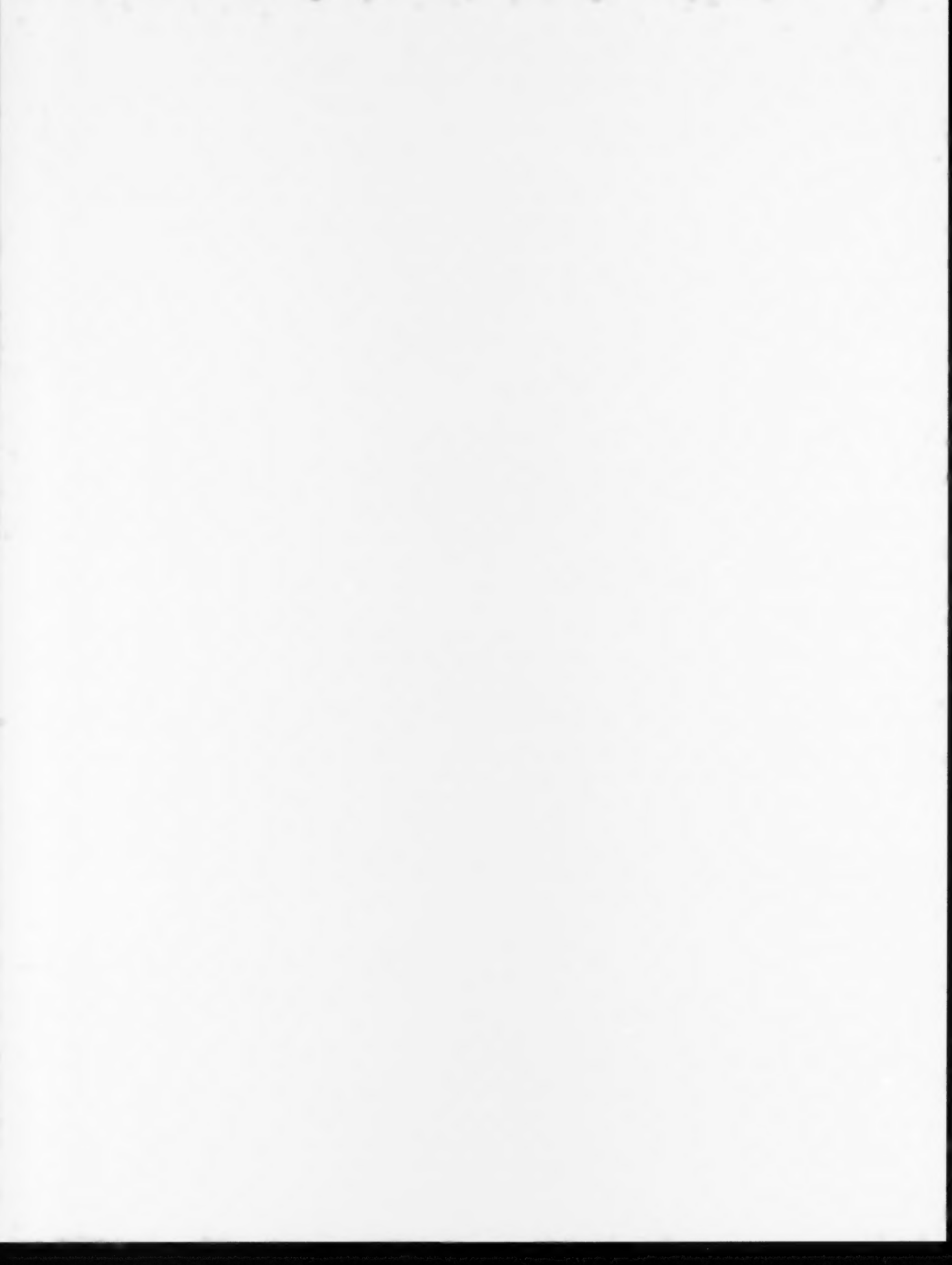
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February 4, 2014

To: His Worship the Mayor,
and Members of City Council

Re: Water and Sewer Utility Budget

Each year City Council is required to adopt operating and capital budgets including the General Operating Budget, the Water and Sewer Utility Budget and the General Capital Budget. This document is the Water and Sewer Utility Budget, which includes the 2014 Utility Operating Budget and the 2014 – 2018 Utility Capital Budget.

Budget Highlights

- Utility rates for 2014 and 2015 have been proposed concurrently with the 2014 Water and Sewer Utility Budget. The effective date for the 2014 rate is proposed as April 1, 2014. For a typical residential customer, the 2014 rates result in an 8.1% increase or about \$10 per month. The increase for a sample commercial customer is 8.2% or about \$65 per month.
- The overall revenue increase for 2014 is 4.7%. There are a number of factors affecting this overall increase:
 - Rate increase of 8%, effective April 1, 2014. Because the increase would be effective for three-quarters of the year, overall revenue for the year would increase by 6% in 2014;
 - Anticipated increase in the number of customers resulting in additional revenues;
 - Process changes for an industrial customer resulting in reduced wastewater revenues;
 - Reduction of provincial grant payment due to repayment of the \$43.1 million provincial loan through the Saskatchewan Infrastructure Growth Initiative (SIGI) program. During the five term of this loan, the province provided a grant to offset the cost of interest on the loan. This loan will be repaid in mid-2014, reducing the grant from \$1.465 million to \$732,000;
 - Decrease in revenue from interest earned on Utility investments.

Details on the rates for 2014 and 2015 are provided on pages 10 and 11 of this document

- The 2014 Utility Operating Budget provides the funding necessary to meet legislative requirements and Council's service objectives for water, wastewater and drainage. The total 2014 Operating budget for the Utility, excluding debt, access fee, and the transfer to the general operating fund, is \$59.1 million, which is an increase of 3.9% from 2013. The Utility Operating Budget provides for the continued development of asset management, business planning and performance metrics to achieve sustainable infrastructure investment strategies.

- In 2014, debt servicing costs have increased from \$4.2 million to \$45.9 million due to the repayment of the \$43.1 million provincial loan taken through the SIGI program. This substantial debt repayment will result in a corresponding reduction in the transfer to the General Utility Reserve in 2014. This reserve, which funds the capital program, has a sufficient balance to service this debt payment and fund the 2014 capital program while remaining above the minimum target balance of \$33 million. The expected balance in the Utility Reserve at the end of 2014 is \$46 million.
- The 2014 – 2018 Utility Capital Program totals \$285.6 million, with 2014 totaling \$36.0 million. In 2013, the total capital investment planned for 2014 was expected to be \$60.7 million. The decrease in the projected expenditures for 2014 results from an assessment of the current progress and capacity of the Utility to manage and deliver on capital work demands, which have increased substantially over the past number of years and are expected to continue at this level for the foreseeable future. A reduced program will allow time for currently approved projects and programs to be delivered, as well as provide time to increase capacity through retaining more consultants and positions.
- In addition to the new capital funding requested for 2014 to 2018, in 2013 City Council approved \$224 million in funding for the Wastewater Treatment Plant Upgrade, required to meet Federal Government requirements under The Canadian Environmental Protection Act and The Fisheries Act as well as to comply with Saskatchewan Environment Regulations.
- The 2014 – 2018 Utility Capital Budget proposes total debt of \$118.3 million in debt issued through the private partner as part of the P3 Wastewater Treatment Plant Upgrade project in 2017 with a further \$25 million issued in 2018 to meet capital requirements.
- Each year, a Utility Administration Charge is transferred to the General Utility Fund, representing an approximate measure of corporate costs that are attributable to the utility. This amount is calculated as 5% of the budgeted utility revenues for the prior year. In 2014, this charge also includes \$356,500 for the cost of the referendum held in 2014. The total charge for 2014 is \$5.5 million.
- As well, each year an amount is transferred to the General Operating Fund, representing a payment in lieu of taxes and access fee. Any organization or utility operating in a municipality would be required to pay the municipality either property taxes or an access fee for operating rights. Regina's transfer is the total of 7.5% of the previous year's budgeted revenues for billed water consumption, wastewater charges and drainage infrastructure levy plus an amount (\$675,000) estimated to be 3/7ths of the GST rebate received by the Utility. This amount is the additional rebate provided by the Federal Government starting in 2004. For 2014, these budgeted amounts total \$8.0 million.

Public Reporting

In 2005, the Province adopted new regulations in Part V.1 of *The Cities Regulations* regarding Public Reporting on Municipal Waterworks. The regulations apply only to waterworks, however since the Utility includes water, wastewater and drainage services, the information required by the regulations is provided for the entire utility. The information requirements include:

- Information on the rate policy and capital investment strategy as adopted pursuant to sections 22.3 and 22.4 of the regulations. The information required with respect to the City's rate policy is provided on pages 8 through 10 of this document. Information on the capital investment strategy is included in the Utility Capital Program Section of this document and in particular, the Infrastructure Overview Section starting on page 45.
- The regulations also require a financial overview. The data outlined in the regulations is included in the Revenue section of this document on page 7 and the Expenditure section on page 17. More detailed information on the revenues and expenditures is provided in the detailed Utility Revenue and Utility Expenditure sections. The regulations also require a comparison of the Utility revenues to expenditures and debt payments, expressed as a ratio in accordance with the following formula:

$$\frac{\text{Revenues}}{\text{(Expenditures + Debt Payments)}}$$

For 2014, based on the definitions in the regulations, the ratio for the Water and Sewer Utility is 1.11, based on revenues of \$107,725,400, expenditures of \$52,396,800 and debt repayments of \$44,606,000. In accordance with the definition in the regulations, expenditures include the interest cost on the debt, while debt payments are the principal repayments on the debt.

For 2014, the ratio indicates that revenues exceed expenditures and debt repayments by 11%. This result shows that the Utility is recovering its operating costs as well as providing investment for future capital requirements. In 2014, this ratio is substantially lower than prior years due to the repayment of debt taken through the provincial SIGI program. After 2015, the ratio is projected to increase to approximately 2.0 over the next several years as additional funding is generated to fund large capital projects such as the Wastewater Treatment Plant Expansion, along with on-going requirements such as infrastructure investment.

- Information on the current reserves and deferred revenue, capital plans for infrastructure projects and the sources of funding for the capital projects are detailed in the Utility Capital Program section of this document.

Capital Requirements and Funding

Regina's location, in a sensitive natural environment far from a major water source, affects the standards and costs for water supply and wastewater treatment and disposal. Additional information on the Utility services and systems in Regina is provided in the Introduction and Expenditure Sections of this document and in the Water and Sewer Utility Business Plan.

The 2014 Utility Capital Budget totals \$36.0 million with the 2014 – 2018 Utility Capital Budget totaling \$285.6 million over five years. In addition to the new capital funding requested for 2014 to 2018, in 2013 City Council approved funding for the Wastewater Treatment Plant Upgrade, with total capital costs estimated at \$224.3 million.

While the overall capital investment proposed for 2014 to 2018 is significant, the long term requirements of the system will continue to put pressure on rate and debt requirements. The capital program for the next five years is focused on addressing the need to upgrade plants, invest in approved

development, and manage essential infrastructure work, including the collection of infrastructure condition data to support sound decision making and the implementation of industry best asset management practices.

While the 20 year Utility Model has been improved to include a number of projects and investments that were not quantified or included in past models, the proposed model is still founded on some conservative assumptions regarding the timing and cost of a number of projects, and it still does not include incremental investments that may be needed to support the new Official Community Plan, redevelopment projects or additional reductions in green house gas emissions. The assumptions create some risks for the City, particularly in relation to the amount of debt that is expected or may be required, particularly in relation to the borrowing capacity and other needs of the City.

While Utility rates were increased in 2008 – 2010 and again in 2011 – 2013 to begin to address these and other capital pressures, the timing and magnitude of the increased revenue is insufficient to offset the timing and financial impact associated with such regulatory changes and other ongoing capital requirements.

Maintenance of the water, wastewater and drainage systems is a duty of the City in the interest of public health and safety. Aging infrastructure and changing regulatory standards contribute to the increasing need for revenue, which result in a requirement to increase rates. The City has a duty to be responsible stewards of these essential utilities to ensure regulatory compliance, and to promote the health, well being and economic prosperity of the community.

Respectfully submitted,



Glen B. Davies
Chief Administrative Officer & City Manager

2014 Budget Overview

The 2014 Water and Sewer Utility Operating and 2014 – 2018 Utility Capital Budgets reflect the City's commitment to maintaining safe and secure Utility operations. Across North America, water and sewer rates are increasing as utilities face challenges relating to:

- assessment and replacement of aging infrastructure
- expansion of capacity
- improvements required to meet enhanced and/or more stringent regulations and standards.

Investment in expanded capacity of the water and sewer system to serve a growing population, and in infrastructure renewal to ensure the system is reliable and safe, are critical to supporting this community and its residents in a period of growth. Utility rates and capital budgets over the next number of years will reflect the need to invest in growth. In particular, the Utility Capital program for the next five years addresses the need to upgrade plants, invest in approved development, and manage essential infrastructure work, including collecting infrastructure condition data to support future decisions.

The 2014 – 2018 Utility Capital Program totals \$285.6 million, with 2014 totalling \$36.0 million.

The 2014 Utility Operating Budget provides the funding necessary to meet legislative requirements and Council's service objectives for water, wastewater and drainage. The total 2014 Operating budget for the Utility, excluding debt and the transfer to the general operating fund, is \$59.1 million, which is an increase of 3.9% from 2013. The Utility Operating Budget provides for the continued development of asset management, business planning and performance metrics to achieve sustainable infrastructure investment strategies.

In 2014, the Utility has budgeted for a reduction in provincial grants due to the repayment of the \$43.1 million loan through the Saskatchewan Infrastructure Growth Initiative (SIGI) program to fund the Global Transportation Hub. This loan will be repaid in mid-2014, reducing the grant from \$1.465 million to \$732,000.

The City of Regina's Water and Sewer Utility operates on a full user-pay model, and is not supported by tax revenue. Utility rates were increased in 2008 – 2010 and again in 2011 - 2013 in order to increase the City's investment in the safe operations of our water and sewer systems. In 2014 – 2015 an additional annual rate increase of 8% is required. In 2014, after the 8% increase, the price of a cubic metre of water will be \$1.59. This volume of water is equivalent to two thousand 500 millilitre bottles, which would cost at least \$3,000 at retail prices.

Strategic Context for the 2014 Budget

The City of Regina is committed to strategic planning as a means to design and execute action plans that will help us achieve ambitious near, medium and long-term goals. Strategy is the integrated set of choices that positions the City to act sustainably, and to provide those services that are critical to the quality of life of its citizens. Strategic planning drives the prioritization and decision making critical to the City's budget, business planning, and the services we deliver to residents.

Regina is experiencing an unprecedented level of growth, and all indicators suggest that this growth will continue in 2014. Growth in the economy and population of the city ultimately means a better standard of living for Regina residents. The opportunities presented by growth are central to the City's development of a new Official Community Plan (OCP) for Regina, which was approved by

Council in 2013. Design Regina articulates a 25-year Vision and Community Priorities, and sets out policies that will support and guide Regina's growth to a population of 300,000. Over the next four years the City of Regina's strategy is focused on building the foundation for sustained growth and achievement of the Design Regina Community Priorities.

Building the Foundation

By 2018, the City of Regina will operate from a position of strength to achieve the Design Regina Community Priorities. The City will be recognized, in particular, for a long term financial sustainability strategy and its increased ability to deliver innovative services in a fiscally responsible manner.

The City of Regina supports and actively promotes growth for the city and region. In order to sustain growth, the City must confront challenges in its finances and the state of the assets that deliver services to residents. The reality is that the rapid and extended period of growth the community has experienced has coincided with a period of steep inflation in the costs of materials and other goods the City requires, and decreased investment, particularly in capital infrastructure, from other levels of government. Furthermore, the City has limited sources of revenue to fund the new and renewed infrastructure and services our growing population requires. The Water and Sewer Utility operates on a full user-pay model, which means that rate-payers fund the full cost of service delivery.

Until recently the City has relied on excess capacity in infrastructure developed in the 1970s to accommodate a growing population, and has deferred maintenance and renewal in order to continue to deliver services while keeping property taxes and Utility rates low. We have now reached the limits of what that infrastructure can bear and new investment will be required to both maintain service to current residents, and to allow Regina to grow to the next level. The City of Regina has more than \$2 billion of backlog in work needed just to repair or replace our aging infrastructure.

Ultimately, building the foundation for sustained growth and prosperity means that citizens, elected officials, and Administration alike will have to work together to agree on sustainable financial models to ensure both services and the assets that deliver them receive appropriate levels of investment. This work has already begun within the Water and Sewer Utility, and provides a model for similar initiatives in other areas of City operations.

Regional Setting

Regina is the centre of an economic region comprised of approximately 40 communities. Initiatives are underway to strengthen partnerships and to collaborate on mutual opportunities and interests. Regina's Utility systems provide some regional services and over time their role may increase. Regina's landlocked status is unique among major Canadian cities and impacts the standards and costs for water supply and wastewater treatment and disposal.

The Utility's water supply and wastewater treatment systems are intended to provide treatment that is appropriate to its natural setting and to minimize the city's influence on the receiving environment and its downstream neighbours. Regina's water supply originates with snow melt and rainfall in the eastern Rocky Mountains that feed the tributaries of the South Saskatchewan River. Buffalo Pound Lake is the source of treated water for Regina, Moose Jaw and several surrounding communities. Regina's treated wastewater effluent and stormwater run-off ultimately end up in Wascana Creek, a seasonal stream that originates to the east of Regina and flows through the City. For much of the year these sources are the only water that feeds Wascana Creek, and without these sources, the creek would be dry.

Regulatory Environment

Saskatchewan Watershed Authority is responsible for management of Saskatchewan's surface water and ground water resources. The Authority regulates the allocation of water, establishes management plans for the province's river basins and is responsible for land drainage and wetland preservation and enhancement.

Saskatchewan's Water Security Agency regulates water supply and distribution, and wastewater collection, treatment and disposal. Permits for the construction and operation of water and wastewater systems require specific standards to protect human health, to ensure consistent water quality, and to minimize impacts on the natural environment. Requirements outlined in the provincial regulations include mandatory operator certification, routine facility inspections, testing and reporting to ensure compliance.

The Federal Government's Fisheries Act prohibits the discharge of any "deleterious substance" that may affect fish or fish habitat. Ammonia is designated a "toxic" substance that is part of the federal governments proposed national standards to regulate municipal wastewater effluents. The Utility's wastewater treatment plant (WWTP) requires a capital upgrade to meet the acute toxicity requirement.

The provinces may impose additional regulations beyond the federal requirements and the Province of Saskatchewan does require the Utility to meet standards beyond the proposed federal standard. The City of Regina and Saskatchewan's Water Security Agency are in broad agreement on the principle that treated effluent standards for the Utility's upgraded wastewater treatment plant should consider environmental effects in the downstream environment. To address this principle, the Utility continues to carry out a significant monitoring program to document current conditions and help project future conditions in the downstream environment as well as proceeding with upgrades to the Wastewater Treatment Plant. Should the Province decide to make standards even more stringent, further significant capital costs would be required. The City of Regina supports the principle of shared fiscal responsibility with respect to protection of the environment. Currently, no provincial or federal funding is provided to meet increased regulatory standards.

It is recognized that the Utility, in particular pumping and treatment operations, accounts for approximately 50% of the City of Regina's overall greenhouse gas emissions. The feasibility of alternatives and associated costs are being considered to achieve reductions that are largely realized by decreasing energy consumption or changing the energy source.

Utility Rates

Rates for the Utility are developed using a long-term financial model that seeks to balance optimum capital investment and operating expenditure and the use of debt with manageable rate increases. In 2011, rates were set for 2011, 2012 and 2013. At that time the 20 year capital plan included the requirement to upgrade the Wastewater Treatment Plant. Since then substantial changes have been made to the 20 year capital plan as a result of the Official Community Plan, the Water System Vulnerability Study, and the Regina Drainage Master Plan. The 20 year capital plan now includes these additional projects:

- \$85 million on the Buffalo Pound Water Treatment Plant;
- \$63 million for an Eastern Pressure Zone, to be funded through Servicing Agreement Fees;
- \$125 million in drainage area upgrades;
- \$24 million in additional wastewater infrastructure renewal.

Over the last several years, efforts have been made to pay off existing Utility debt and to build up the General Utility Reserve (GUR) in order to mitigate the effect of the increased capital demands. In 2014, the Utility will pay down \$44.6 million in debt, and is projected to end the year with \$45.9 million in the GUR. New debt will be taken as part of the Wastewater Treatment Plant Upgrade Project in 2017.

Based on the projections in the long-term Utility model, rate increases of 8% per year are proposed for 2014 and 2015.

2014 Budget Process

Budgets support and define the City's priorities. The process to develop the budget always involves difficult choices, but even more so as the City of Regina faces expenditure growth that far outstrips revenues, and a growing infrastructure gap. The Utility now operates with the benefit of a long-term financial model, which allows for choices to be made with better awareness of the implications in terms of inflation, service interruptions, and other risks. The four year vision of building the foundation upon which the City operates, combined with the constrained resource picture projected for 2014, drove choices in the 2014 Budget.

The approach to developing the 2014 Budget focused first on containing operating costs. Other than adding services or improving service levels, operating costs for the City can increase for two reasons:

- Providing the same service to more people because of population growth
- Inflation

To better evaluate and control operating costs in the 2014 Budget, the City set a restriction on cost escalations for ongoing service equivalent to inflation plus population growth. Regina's population has been growing at a steady rate of about 2% per year.

To measure inflation the City uses the Municipal Price Index (MPI). The MPI, based on a "basket of goods" relevant to municipalities, is now being measured across Canada. The City of Regina's "basket of goods" combined with inflation information obtained from the Conference Board of Canada resulted in an MPI of 3.44% for 2014. Population growth and inflation (MPI) results in a targeted restriction on cost escalations for ongoing operations of 5.44%.

By evaluating operating expenditures based on this target, the Utility identified where increased funding was required for ongoing programs and services due to cost escalations beyond its control. The following criteria were used to prioritize expenditures.

- Maintain existing services
- Expand existing services to new areas of Regina
- Support addressing the challenges of aging infrastructure
- Minimize the burden on ratepayers

As a result of this work, the Utility was able to keep operating costs below the target. Total Utility operating expenditures will increase by just 3.9% in 2014.

In its capital budget, the City faces a significant challenge to adequately fund the infrastructure that is required for growth, the protection of the public and property, meeting new legislative requirements, and repairing and replacing existing infrastructure as it reaches the end of its useful life. Within its 20 year model the Utility had planned for a capital investment of \$60.7 million in 2014. The 2014 budget process included an assessment of both the historical and future projected capacity of the Utility to manage and deliver capital projects. This assessment identified

the need to scale back the planned program in 2014, in order to allow for currently approved projects and programs to be completed, as well as to increase capacity through retaining increased consultants and positions. With the 2015 budget the Utility capital program is expected to increase substantially again, and to continue to increase in the foreseeable future due to growth and the need for infrastructure renewal and replacement.

Utility Service Overview

The Water and Sewer Utility provides water, wastewater and drainage services primarily to customers in Regina. The services provided by the Utility are grouped into four programs: Water Supply and Distribution, Wastewater Collection and Treatment, Storm Water Collection and Flood Protection, and Customer Service.

Water Supply and Distribution Program

The water system provides water for residential, institutional, commercial and industrial customers as well as water for fire protection. The system serves a population of approximately 200,000 including some customers outside the City limits. Service goals include:

Servicing Development

- Accommodate growth and redevelopment within planning policy by providing access to service when and where it is wanted and planned.

Reliable Service

- Provide water at adequate pressure and in sufficient quality and quantity to satisfy the requirements for domestic and commercial use, irrigation and fire protection.
- Ensure water will be available with only minimal local disruptions for system maintenance and rare large-scale disruptions due to unforeseen catastrophe.

Regulatory Compliance

- Provide water that meets or exceeds Provincial water quality standards and objectives.

Environmental Stewardship

- Enhance Water Efficiency by reducing water loss and the per capita water consumption and the short term peak water demand.

Customer Service

- Be responsive to customer service requests.
- Minimize length of service disruption.

Wastewater Collection and Treatment Program

The wastewater system collects wastewater from all residential, institutional, commercial and industrial customers in the City, and treats wastewater to meet Provincial and Federal environmental regulations and industry standards. Service goals include:

Servicing Development

- Accommodate growth and redevelopment by providing access to service when and where it is wanted.

Reliable Service

- Collect and deliver residential, commercial and industrial wastewater with minimal public impact.

Regulatory Compliance

- Collect and deliver wastewater in compliance with the Saskatchewan Environment operating permit.
- Produce and treat wastewater effluent that meets the requirements of the Saskatchewan Environment operating permit.

Environmental Stewardship

- Ensure that constituents (biosolids) that are removed from the wastewater are treated and disposed of in an appropriate manner.
- Minimize the discharge of industrial pollution and hazardous waste to the sewer system.
- Maximize efficiency of pump, and treatment system operation.

Customer Service

- Be responsive to customer service requests.
- Minimize length of service disruption

Storm Water Collection and Flood Protection Program

The drainage system controls water runoff resulting from rainfall and melting snow in and around the city. The system serves approximately 65,000 residential, institutional, commercial and industrial properties. Service goals include:

Servicing Development

- Accommodate growth and redevelopment within planning policy (RDP) by providing access to service when and where it is wanted.

Reliable Service

- Collect and control drainage water within the City to minimize inconvenience, and decrease property damage and danger to the public.
- Carry out spring flood control measures as required, to prevent property damage and protect public safety.

Environmental Stewardship

- Protect environment from stormwater related water quality risks.
- Maximize efficiency of pumping system operation.
- Support conservation and sustainable storm water management.

Customer Service

- Be responsive to customer service requests.
- Minimize length of service disruption.

Customer Service Program**Utility Billing**

- Produce and collect on Utility billings in an efficient, accurate and timely manner.

Communications

- Be responsive to customer inquiries and needs.

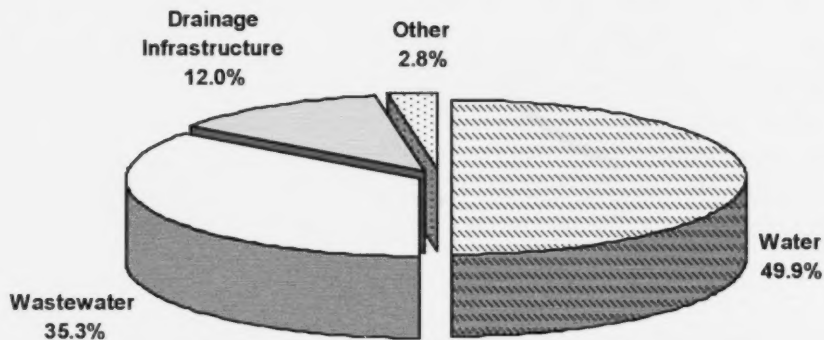
The Water and Sewer Utility is responsible for diverse infrastructure including water mains, storage reservoirs, pumping stations, building service connections, wastewater treatment plant, wastewater and storm drainage sewers, and drainage channels and creeks. The City of Regina is also a joint owner of the Buffalo Pound Water Treatment Plant with the City of Moose Jaw.

Utility Operating Revenues

Utility Operating Revenue Summary (\$000's)

Revenue Details (\$000's)	2013 Budget	2013 Actual ¹	2014 Budget	Budget Change	
				Dollar Change (\$)	Percent Change %
Water Revenue					
Metered Water Charges	49,810.8	51,098.8	53,375.3	3,564.5	7.2
Unmetered Water Charges	50.0	34.7	50.0	-	-
Service Connections (New/Replacement)	486.0	393.2	295.0	(191.0)	(39.3)
Subtotal	50,346.8	51,526.7	53,720.3	3,373.5	6.7
Wastewater Revenue					
Wastewater Charges	35,988.0	38,262.0	37,970.3	1,982.3	5.5
Wastewater Service Surcharge	100.0	585.4	100.0	-	-
Subtotal	36,088.0	38,847.4	38,070.3	1,982.3	5.5
Drainage Infrastructure Levy	11,906.6	12,063.1	12,914.1	1,007.5	8.5
Other Revenues:					
Provincial Grant - SIGI	1,465.4	1,465.0	732.7	(732.7)	-
Interest Earned on Investments	2,000.0	1,601.1	800.0	(1,200.0)	(60.0)
Account Service Fees	300.0	393.2	350.0	50.0	16.7
Delinquency & Collection Admin.	267.0	258.3	267.0	-	-
Meter Administration Fees	105.0	64.0	65.0	(40.0)	(38.1)
SAF Administration Fees	384.0	613.6	756.0	372.0	-
Other Revenues	27.0	389.1	50.0	23.0	-
Subtotal	4,548.4	4,784.3	3,020.7	(1,527.7)	(33.6)
Total Utility Revenues	102,889.8	107,221.5	107,725.4	4,835.6	4.7

2014 Operating Revenues



Utility Rates and Rate Policies

Section 22.3 of *The Cities Regulations* requires Council to adopt a rate policy that sets out the rates or fees to be charged to consumers for the use of water. The policy must include the method used to determine those rates or fees. In establishing Utility rates, the following policies have been adopted in the past by City Council:

1. Utility rates are to be established such that they are sufficient, based on long term projections, to fully fund Utility operating costs, interest cost and debt repayments, capital requirements, and transfer policies, taking into account the operating and infrastructure requirements of the Utility required to meet the service goals of the Utility, as determined by City Council or prescribed by legislation. The objectives for the Utility's rate structure are:
 - **Financial Self Sufficiency** – Utility rates must generate revenue adequate to meet all operating and capital costs of the Utility in both the short and the long term.
 - **Conservation** – Utility rates should encourage customers to use water responsibly.
 - **Reduction of Peak Demand** – The Utility rates should encourage water conservation during summer months, reducing the need for infrastructure investment and higher rates.
 - **Equity** – The Utility rates should result in a charge to customers according to the cost of services utilized.
2. The rate structure for water and wastewater will include a base fee that varies according to the size of the water meter. The variation in the base rate by meter size will be based on the schedule recommended by the American Water Works Association (AWWA). The ratios for the base rate based on meter size are shown in the following table.

Water and Wastewater Base Fee Ratios

<u>Meter Size</u>	<u>AWWA Standard Ratio</u>
15 mm	1.0
18 mm	1.0
25 mm	1.4
40 mm	1.8
50 mm	2.9
75 mm	11
100 mm	14
150 mm	21
200 mm	29

3. The rate structure for water and wastewater will include a uniform rate for each cubic metre of water consumed and each cubic metre of deemed wastewater flow. For water, the uniform rate is applied to all consumption. For wastewater, the deemed volume is a percentage of the water consumption. The percentages are:
 - For residential customers, the wastewater volume is 82% of the water consumption;
 - For multiple unit residential properties, the percentage is 95% of the water consumption; and,
 - For institutional, commercial and industrial properties, the percentage is 98% of the water consumption.

4. The rate structure for the storm drainage infrastructure levy will be based on the size of the property, with larger properties paying a higher levy. The ratios approved by City Council in 2001 (CR01-189) are shown in the following table. The drainage levy applies irrespective of whether the property is connected to the water or wastewater systems.

Drainage Infrastructure Rate Ratios

<u>Area of Property</u>	<u>Rate Ratio</u>
0 to 1,000 m ²	1.0
1,001 to 3,000 m ²	2.0
3,001 to 5,000 m ²	4.0
5,001 to 7,000 m ²	6.0
7,001 to 9,000 m ²	8.0
9,001 to 11,000 m ²	10.0
11,001 to 13,000 m ²	12.0
13,001 to 15,000 m ²	14.0
15,001 to 17,000 m ²	16.0
17,001 to 19,000 m ²	18.0
19,001 to 21,000 m ²	20.0
21,001 to 23,000 m ²	22.0
23,001 to 25,000 m ²	24.0
25,001 to 27,000 m ²	26.0
27,001 to 29,000 m ²	28.0
29,001 to 31,000 m ²	30.0
Over 31,000 m ²	32.0

Regardless of actual property size, the rate for properties up to 1,000 m² is applied to all locations designated as "standard residential properties."

5. **In the setting of rates, the Utility must at minimum present a balanced budget, with any surplus intended for the following purposes:**

- **Transfer to the General Utility Reserve** –The purpose of the reserve is to provide a source of financing for capital projects and to provide a contingency to fund emergency expenditures. The balance of the Utility's surplus, after other transfers, is transferred to the General Utility Reserve. For 2014, the transfer is budgeted at **\$2.7 million**. Through the use of the Utility Model, an overall requirement for capital funding is established. Utility rates are set in order to provide sufficient surpluses to cover the capital costs over the next twenty years.

In the event that the Utility incurs an operating deficit in a given year, the deficit would also be funded from the reserve.

6. **The Utility Operating Expenses include an 'Access Fee,' which is a transfer to the City's General Operating Fund.** Any organization or Utility operating in a municipality would be required to pay the municipality either property taxes or an 'Access Fee' for the rights to use or access civic assets in the delivery of service. Policies on these types of fees vary from city to city. Calgary's Utility pays 10% of revenue plus a 10% return on equity. The City of Saskatoon's Utility pays a franchise fee based on 10% of revenue. Winnipeg's is also 10%, with dividends paid. Moose Jaw's rate is 5% of revenue. Regina's transfer is the total of the following amounts:

- 7.5% of the previous years budgeted revenues for billed water consumption, wastewater charges and drainage infrastructure levy; and,

- The amount of \$675,000, estimated to be 3/7^{ths} of the GST rebate received by the Utility. This amount is the additional rebate provided by the Federal Government starting in 2004.

For 2014, these amounts total \$8.0 million.

7. **The Utility Operating Expenses also include a Utility Administration Charge, which is an approximate measure of corporate costs that are attributable to the utility.** The Utility Administration Charge is calculated as 5% of the budgeted utility revenues for the prior year. Most corporate functions (City Council, Committees, City Manager, Human Resources, City Solicitor's Office, City Clerk's Office, Accounting, Budgeting, and Purchasing) are involved in issues or activity related to the Water and Sewer Utility. The percentage transfer is used in lieu of a more detailed cost allocation process. A more detailed process would still involve arbitrary decisions, and would significantly increase the effort and hence cost required as compared to the current policy. In 2014, this charge also includes \$356,500 for the cost of the referendum held in 2013. The total charge for 2014 is \$5.5 million.

Approved Utility Rates for 2014 and 2015

City Council's prior practice has been to establish Utility rates every three years, with a three-year schedule of rates adopted. Rates for water, wastewater and drainage for 2011 - 2013 were approved in conjunction with the 2011 Utility Budget. New rates for 2014 and 2015 have been approved in conjunction with the Utility Budget and will be implemented effective April 1, 2014.

The approved Utility rates for 2014 and 2015 are shown in the following tables. Rates are billed monthly and are based on a daily fixed charge.

<u>Water Rates</u>			
	<u>Approved Rate</u>	<u>Approved Rate Schedule</u>	
	2013 (\$)	2014 (\$)	2015 (\$)
Daily Base Fee:			
15 mm/18 mm water meter	0.62	0.67	0.72
25 mm water meter	0.87	0.94	1.01
40 mm water meter	1.12	1.21	1.30
50 mm water meter	1.80	1.94	2.09
75 mm water meter	6.82	7.37	7.92
100 mm water meter	8.68	9.37	10.08
150 mm water meter	13.02	14.06	15.12
200 mm water meter	17.98	19.42	20.88
Volume Charge:			
Charge per m ³	1.47	1.59	1.72

Wastewater Rates

	Approved Rate	Approved Rate Schedule	
	2013 (\$)	2014 (\$)	2015 (\$)
Daily Base Fee:			
15 mm/18 mm water meter	0.48	0.52	0.56
25 mm water meter	0.67	0.73	0.78
40 mm water meter	0.86	0.93	1.01
50 mm water meter	1.39	1.50	1.62
75 mm water meter	5.28	5.70	6.16
100 mm water meter	6.72	7.26	7.84
150 mm water meter	10.08	10.89	11.76
200 mm water meter	13.92	15.03	16.24
Volume Charge:			
Charge per m ³	1.32	1.43	1.54

Storm Drainage Rates

	Approved Rate	Approved Rate Schedule	
	2013 (\$)	2014 (\$)	2015 (\$)
Daily Base Fee:			
0 to 1,000 m ²	0.41	0.44	0.48
1,001 to 3,000 m ²	0.82	0.89	0.96
3,001 to 5,000 m ²	1.64	1.77	1.92
5,001 to 7,000 m ²	2.46	2.66	2.88
7,001 to 9,000 m ²	3.28	3.54	3.84
9,001 to 11,000 m ²	4.10	4.43	4.80
11,001 to 13,000 m ²	4.92	5.31	5.76
13,001 to 15,000 m ²	5.74	6.20	6.72
15,001 to 17,000 m ²	6.56	7.08	7.68
17,001 to 19,000 m ²	7.38	7.97	8.64
19,001 to 21,000 m ²	8.20	8.86	9.60
21,001 to 23,000 m ²	9.02	9.74	10.56
23,001 to 25,000 m ²	9.84	10.63	11.52
25,001 to 27,000 m ²	10.66	11.51	12.48
27,001 to 29,000 m ²	11.48	12.40	13.44
29,001 to 31,000 m ²	12.30	13.28	14.40
Over 31,000 m ²	13.12	14.17	15.36

Utility Customers

The Utility provides services to a population of approximately 200,000 including service to some customers and communities outside of the City limits. The following tables provide information on the number and categories of Utility customers.

Water and Sewer Utility Customers

	<u>Water Customers</u>	<u>Wastewater Customers</u>	<u>Drainage Customers</u>
Residential	62,840	62,831	62,786
Multi-Unit Residential	877	875	883
Commercial	3,266	3,170	3,355
Irrigation	353	45	-
Total	<u>67,336</u>	<u>66,921</u>	<u>67,024</u>
Within City Limits	67,251	66,883	67,024
Outside City Limits	85	38	-
Total	<u>67,336</u>	<u>66,921</u>	<u>67,024</u>

Water Customers

<u>Water</u>	<u>Residential</u>	<u>Multi-Unit Residential</u>	<u>Commercial</u>	<u>Irrigation</u>	<u>Total</u>
15 mm - 5/8"	59,947	36	1,249	11	61,243
18 mm - 3/4"	2,734	217	1,055	35	4,041
25 mm - 1"	146	361	429	95	1,031
40 mm - 1.5"	12	132	174	70	388
50 mm - 2"	1	73	215	134	423
75 mm - 3"	-	58	117	6	181
100 mm - 4"	-	-	16	2	18
150 mm - 6"	-	-	8	-	8
200 mm - 8"	-	-	3	-	3
Total	<u>62,840</u>	<u>877</u>	<u>3,266</u>	<u>353</u>	<u>67,336</u>

Wastewater Customers

<u>Wastewater</u>	<u>Residential</u>	<u>Multi-Unit Residential</u>	<u>Commercial</u>	<u>Irrigation</u>	<u>Total</u>
15 mm - 5/8"	59,947	36	1,238	7	61,228
18 mm - 3/4"	2,727	217	1,029	2	3,975
25 mm - 1"	145	361	422	13	941
40 mm - 1.5"	11	130	167	11	319
50 mm - 2"	1	73	183	10	267
75 mm - 3"	-	58	113	2	173
100 mm - 4"	-	-	11	-	11
150 mm - 6"	-	-	5	-	5
200 mm - 8"	-	-	2	-	2
Total	<u>62,831</u>	<u>875</u>	<u>3,170</u>	<u>45</u>	<u>66,921</u>

Utility Operating Revenues

Drainage Customers

<u>Drainage</u>		<u>Residential</u>	<u>Multi-Unit Residential</u>	<u>Commercial</u>	<u>Total</u>
0 to 1,000 m ²	1	62,786	390	1,415	64,591
1,001 to 3,000 m ²	2	-	329	847	1,176
3,001 to 5,000 m ²	3	-	68	344	412
5,001 to 7,000 m ²	4	-	37	167	204
7,001 to 9,000 m ²	5	-	17	124	141
9,001 to 11,000 m ²	6	-	12	86	98
11,001 to 13,000 m ²	7	-	12	52	64
13,001 to 15,000 m ²	8	-	4	52	56
15,001 to 17,000 m ²	9	-	1	45	46
17,001 to 19,000 m ²	10	-	3	24	27
19,001 to 21,000 m ²	11	-	5	32	37
21,001 to 23,000 m ²	12	-	2	19	21
23,001 to 25,000 m ²	13	-	1	12	13
25,001 to 27,000 m ²	14	-	1	8	9
27,001 to 29,000 m ²	15	-	-	12	12
29,001 to 31,000 m ²	16	-	-	6	6
Over 31,000 m ²	17	-	1	110	111
Total Properties		62,786	883	3,355	67,024

Utility Rate History and Comparisons

The following tables detail the history of Utility rates since 2004, and the annual cost and annual cost increase for a sample residential customer with 360 cubic metres of water consumption a year.

Water Rate History

<u>Year</u>	<u>Fixed Annual Charge (\$)</u>	<u>Volume Charge (\$/Cubic Metre)</u>	<u>Cost for Sample Customer</u>	
			<u>Annual Charge for 360 Cubic Metres (\$)</u>	<u>Per Cent Increase (%)</u>
2004	117.00	0.81	408.60	3.7
2005	123.00	0.83	421.80	3.2
2006	129.00	0.85	435.00	3.1
2007	135.05	0.88	451.85	3.9
2008	146.00	0.96	491.60	8.8
2009	160.60	1.05	538.60	9.6
2010	175.20	1.14	585.60	8.7
2011	189.80	1.24	636.20	8.6
2012	208.05	1.35	694.05	9.1
2013	226.30	1.47	755.50	8.9
2014	244.55	1.59	816.95	8.1
2015	262.80	1.72	882.00	8.0

Wastewater Rate History

Year	Fixed Annual Charge (\$)	Volume Charge (\$/Cubic Metre)	Cost for Sample Customer	
			Annual Charge for 360 Cubic Metres (\$)	Per Cent Increase (%)
2004	87.00	0.69	290.69	4.3
2005	93.00	0.72	305.54	5.1
2006	99.00	0.75	320.40	4.9
2007	102.20	0.78	332.46	3.8
2008	116.80	0.85	364.07	9.5
2009	124.10	0.93	398.64	9.5
2010	135.05	1.01	433.20	8.7
2011	146.00	1.11	473.67	9.3
2012	160.60	1.21	517.79	9.3
2013	175.20	1.32	564.86	9.1
2014	189.80	1.43	611.94	8.3
2015	204.40	1.54	659.01	7.7

Drainage Infrastructure Levy Rate History

Year	Property Category	Annual Levy (\$)	Percentage Increase (%)
2004	1,000 square metres or less	72.00	20.0
2005	1,000 square metres or less	78.00	8.3
2006	1,000 square metres or less	84.00	7.7
2007	1,000 square metres or less	91.25	8.6
2008	1,000 square metres or less	98.55	8.0
2009	1,000 square metres or less	105.85	7.4
2010	1,000 square metres or less	116.80	10.3
2011	1,000 square metres or less	127.75	9.4
2012	1,000 square metres or less	138.70	8.6
2013	1,000 square metres or less	149.65	7.9
2014	1,000 square metres or less	160.60	7.3
2015	1,000 square metres or less	175.20	9.1

Customer Impact of Utility Rates

New rates for water, wastewater and drainage for 2014 and 2015 have been submitted in conjunction with the Utility Budget. Examples of the impact of the 2014 rates are provided below. Note: the 2014 rate increase was implemented on April 1, 2014. As a result, the impact will be reduced. For comparison purposes, the tables below and on the next page show a full year impact for the 2014 rates.

Average Home Owner

The following chart illustrates the impact of the 2014 rates on a homeowner who uses 360 cubic metres of water per year. The water consumption is typical for a family of two adults and two children, in a home with two bathrooms, a dishwasher and washing machine, on a lot with typical landscaping for Regina. The cost increase resulting from the 2014 rates is about \$9.96 per month for the average homeowner.

2014 Rate Impact - Sample Home Owner

	2013 (\$)	2014 (\$)	Dollar Change (\$)	Per Cent Change (%)
Water				
Annual Basic Charge	226.30	244.55	18.25	
Annual Volume Charge	529.20	572.40	43.20	
Total Annual Water	755.50	816.95	61.45	8.13
Wastewater				
Annual Basic Charge	175.20	189.80	14.60	
Annual Volume Charge	389.66	422.14	32.48	
Total Annual Wastewater	564.86	611.94	47.08	8.33
Annual Drainage Infrastructure Levy	149.65	160.60	10.95	7.32
Total Annual Utility Charges	1,470.01	1,589.49	119.48	8.13

Sample Commercial Customer

The following chart illustrates the impact of the 2014 rates on a commercial customer with a 40 mm meter that uses 3,000 cubic metres of water per year, with a property size in the range of 3,001 to 5,000 square metres. This water consumption would be typical for a strip-mall with a restaurant and a hair salon with a parking lot and minimal landscaping.

2014 Rate Impact - Sample Commercial Owner

	2013 (\$)	2014 (\$)	Dollar Change (\$)	Per Cent Change (%)
Water				
Annual Basic Charge	408.80	441.65	32.85	
Annual Volume Charge	4,410.00	4,770.00	360.00	
Total Annual Water	4,818.80	5,211.65	392.85	8.15
Wastewater				
Annual Basic Charge	313.90	339.45	25.55	
Annual Volume Charge	3,880.80	4,204.20	323.40	
Total Annual Wastewater	4,194.70	4,543.65	348.95	8.32
Annual Drainage Infrastructure Levy	598.60	646.05	47.45	7.93
Total Annual Utility Charges	9,612.10	10,401.35	789.25	8.21

Rate Comparison - Sample Residential Customer

The following chart compares the 2014 rates for Regina and other cities for a sample residential customer. The sample customer is a home owner who uses 360 cubic metres of water per year. The water consumption is typical for a family of two adults and two children, in a home with two bathrooms, a dishwasher and washing machine, on a lot with typical landscaping for Regina.

Sample Residential Customer - 2014 Rates

Utility Bill Details	Regina	Calgary	Edmonton	Saskatoon	Winnipeg
Water					
Annual Basic Charge	\$ 244.55	\$ 189.00	\$ 84.36	\$ 102.96	\$ 109.50
Annual Volume Charge	572.40	618.30	687.55	368.58	511.20
Total Annual Water	816.95	807.30	771.91	471.54	620.70
Wastewater					
Annual Basic Charge	189.80	193.80	145.32	102.96	-
Annual Volume Charge	422.14	363.38	556.67	211.74	795.60
Total Annual Wastewater	611.94	557.18	701.99	314.70	795.60
Annual Drainage Infrastructure Levy	160.60	110.40	198.09	193.88 ¹	-
Total Annual Utility Charges	\$ 1,589.49	\$ 1,474.88	\$ 1,671.99	\$ 980.12	\$ 1,416.30

Note:

1. Saskatoon's infrastructure levy is calculated based on volume of water used and is not specific to the drainage infrastructure.

Rate Comparison - Sample Commercial Customer

The following chart compares the 2014 rates for Regina and other cities for a sample commercial customer. The commercial customer has a 40 mm meter, uses 3,000 cubic metres of water per year, with a property size in the range of 3,001 to 5,000 square metres. This water consumption would be typical for a strip-mall with a restaurant and a hair salon with a parking lot and minimal landscaping.

Sample Commercial Customer - 2014 Rates

Utility Bill Details	Regina	Calgary	Edmonton	Saskatoon	Winnipeg
Water:					
Annual Basic Charge	\$ 441.65	\$ 510.00	\$ 286.56	\$ 1,630.80	\$ 149.65
Annual Volume Charge	4,770.00	3,873.00	3,916.38	2,429.11	4,049.68
Total Annual Water	5,211.65	4,383.00	4,202.94	4,059.91	4,199.33
Wastewater:					
Annual Basic Charge	343.10	193.80	236.76	1,630.80	-
Annual Volume Charge	4,204.20	3,168.90	5,225.40	2,167.45	6,630.00
Total Annual Wastewater	4,547.30	3,362.70	5,462.16	3,798.25	6,630.00
Drainage Infrastructure Levy	642.40	110.40	1,782.84	1,315.48 ¹	-
Total Annual Utility Charges	\$ 10,401.35	\$ 7,856.10	\$ 11,447.94	\$ 9,173.64	\$ 10,829.33

Note:

1. Saskatoon's infrastructure levy is calculated based on volume of water used and is not specific to the drainage infrastructure.

Utility Operating Expenditures

Utility Operating Expenditure Summary (\$000's)

Expenditure Details (\$000's)	2013 Budget	2013 Actual ¹	2014 Budget	Budget Change	
				Dollar Change (\$)	Percent Change (%)
Operations & Construction					
Water Operations	12,016.8	12,741.5	13,145.5	1,128.7	9.4
Water & Sewer Construction	8,015.8	7,701.9	8,089.1	73.3	0.9
Sewer & Drainage Operations	6,089.5	6,276.4	6,121.3	31.8	0.5
Waste Water Treatment	7,580.0	5,722.0	6,718.2	(861.8)	(11.4)
Subtotal	33,702.1	32,441.8	34,074.1	372.0	1.1
Planning & Engineering					
Water Works Engineering	2,722.0	1,931.3	2,292.8	(429.2)	(15.8)
Construction & Compliance	2,382.9	2,063.9	2,795.8	412.9	17.3
Subtotal	5,104.9	3,995.2	5,088.6	(16.3)	(0.3)
Utility Administration					
Customer Service & Administration	5,969.7	5,466.5	6,419.0	449.3	7.5
Access Fee	7,380.9	7,380.9	8,002.9	622.0	8.4
Utility Administration Charge	4,708.3	4,708.3	5,501.0	792.7	16.8
Subtotal	18,058.9	17,555.7	19,922.9	1,864.0	10.3
Total Operating Expenditures	56,865.9	53,992.7	59,085.6	2,219.7	3.9
Other Expenditures					
Debt Costs	4,181.1	3,643.2	45,920.1	41,739.0	998.3
Total Expenditures	61,047.0	57,635.9	105,005.7	43,958.7	72.0
Net Utility Reserve Transfer	41,842.8	49,552.7	2,719.7	(39,123.1)	(93.5)

Staffing Summary

FTE's by Division	2013			2014			Change
	Permanent	Casual	Total	Permanent	Casual	Total	
City Operations ⁽¹⁾	205.7	27.4	233.1	207.1	26.5	235.6	2.5
Community Planning & Development ⁽¹⁾	18.8	1.6	20.4	20.4	1.6	22.0	1.6
Corporate Services	25.5	1.8	27.3	25.5	2.8	28.3	1.0
Office of the City Manager	1.0	-	1.0	1.0	-	1.0	-
Total⁽³⁾⁽⁴⁾	251.0	30.8	281.8	254.0	32.9	286.9	5.1

Note:

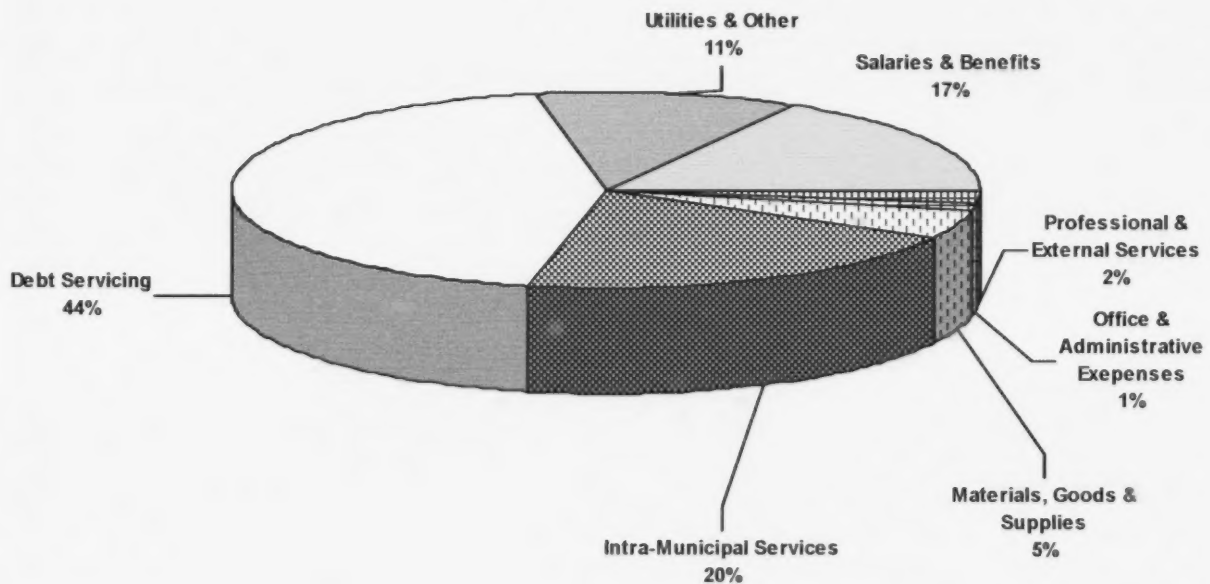
1. Adjustments to allocations between the General Operating and General Utility funds has resulted in an increase of 0.75 permanent FTE and 0.1 casual FTE and corresponding reduction in General Operating allocations.

Operating Expenditure Summary (\$000's) by Type of Expenditure

Expenditures	2013 Budget	2013 Actual	2014 Budget	Budget Change	
				Dollar Change (\$)	Percent Change (%)
Salaries & Benefits	16,866.1	16,813.7	17,632.2	766.1	4.5
Employee Related Payments	83.4	94.2	86.8	3.4	4.1
Office & Administrative Expenses	866.0	1,009.2	1,011.2	145.2	16.8
Professional & External Services	3,126.6	1,264.0	2,208.1	(918.5)	(29.4)
Materials, Goods & Supplies	5,305.4	4,932.6	4,905.3	(400.1)	(7.5)
Utilities and Other Expenditures	10,770.6	11,406.3	11,926.7	1,156.1	10.7
Intra-Municipal Services	19,847.8	18,472.7	21,315.3	1,467.5	7.4
Total Operating Expenditures	56,865.9	53,992.7	59,085.6	2,219.7	3.9
Debt Servicing	4,181.1	3,643.2	45,920.1	41,739.0	998.3
Total Expenditures	61,047.0	57,635.9	105,005.7	43,958.7	72.0
Net Utility Reserve Transfer	41,842.8	49,552.7	2,719.7	(39,123.1)	(93.5)

2014 Operating Expenditures

(thousands of dollars)



Utility Operating Expenditures

Analysis of Operating Expenditure Budget Change

Details		(\$000's)
2013 Total Expenditures Budget		\$ 61,047.0
1. Salaries and Benefits - Includes cost changes resulting from in-range progression increases, classification reviews, general employer benefit costs (EI, CPP, WCB, etc. which increase proportionate with salaries), the City's portion of increases in employee pension contributions and negotiated salary increase. (Base)		288.8
2. 2013 One Time Items - This represents one time items contained in the 2012 budget and includes Increased Wastewater Treatment demands, Proactive Storm Cleaning Plans, Water Meter Accuracy Testing, Core Park Underground Detention Cleaning, and Utility Budget and Business Improvement Strategy Support. (One-Time)		(1,264.0)
3. Testing for Wastewater Treatment Plant - Increase cost of testing materials for tests required to meet provincial and federal testing requirements at the Wastewater Treatment Plant. (Base)		35.0
4. Increase in Allocated Fleet Costs - Costs Allocated by Corporate Services (Base)		25.9
5. Allocation Adjustments from General Operating to Utility Operating - Adjustment of the operating budgets to reflect the distribution of work. (Base)		214.4
6. Purchase of Water - Increase in cost of water from Buffalo Pound Water Treatment Plant. (Base)		360.0
7. Purchase of Water - Increase in volume of water purchase due to growth. (On-going)		610.0
8. Power Costs - Increase in power cost for pumping at the Buffalo Pound Water Treatment Plant. (Base)		10.0
9. Utility Billing Postage - Increase as a result of increased number of accounts to be billed. (On-going)		5.6
10. Utility Billing Postage - Increased cost as a result of postage increases from Canada Post. (Base)		16.5
11. Water Distribution System Maintenance - City growth has resulted in additional underground linear infrastructure and additional valves and fire hydrants of approximately 8% over the last 5 years. Increased resourcing is required to provide routine inspection and maintenance of this infrastructure. (0.75 Permanent FTE and 1.0 Casual FTE) (On-going)		97.5
12. Tor Hill Pumping Station Operations and Maintenance - This funding will provide for the operation and maintenance of the Tor Hill Pumping Station, which supplies water to the Tor Hill and Murray Golf Courses and the the Golf Course Maintenance Shop.. (0.5 Permanent FTE) (On-going)		18.5
13. Office Space to Support Increased Staffing - Additional office space is required to accommodate the additional staffing primarily to deliver the increased capital program. New facilities to support the needs of Utility operations is not expected to be constructed for 5-10 years. This funding is required to provide for the rental of office space. (On-going)		200.0
14. Boundary Realignment - This funding will provide for one-time costs (\$67,000) for transition as well as on-going costs (\$20,000) for operation and maintenance of additional assets as a result of boundary realignment, including culverts and creeks and water supply infrastructure. (On-going/One-time)		87.0
15. Liquid Alum - Increased cost of material requirements for the Wastewater Treatment Plant for liquid alum (aluminium sulphate), which is used on a continuous basis in the treatment of wastewater. (One-time)		50.0
16. Utility Billing Staffing - Increased volume of work in addition to increased complexity in billing related to building permits has resulted in a need for additional resources until process improvements can be implemented. (1 Casual FTE) (One-time)		49.8

Details	(\$000's)
17. Administrative Charge - Increase in the administrative charge as per the policy. The charge is 5% of the prior year's budgeted revenue. In 2014, this charge also includes \$356,500 for the cost of the referendum held in 2013. (Base)	792.7
18. Debt Costs - This represents the change in total interest and principle payments for the Utility in 2013. (Base)	41,739.0
19. Transfer in Lieu of Taxes - Increase in Transfer to General Operating Fund in Lieu of Taxes. (Base)	622.0
2014 Operating Budget	<u>\$ 105,005.7</u>

Note:

1. *Base request funding – represents an increase in cost necessary to maintain current investment levels.*
2. *On-going request funding – represents expenditures that would be ongoing past the current budget year.*
3. *One-Time request funding – represents one-time expenditures for the current budget year.*

Water and Sewer Utility Description

Mandate

We will be recognized by our customers and beneficiaries for excellence in sustainable stewardship of our water resources and utility assets protecting public health, safety, property and the environment.

We strive to maintain current service levels by managing Utility services based on 3-5 year needs assessments with reasonable rate increases.

A brief overview of the purposes of each work area is outlined below.

Water and Sewer Services Department (City Operations Division)

Provide design, construct, operate and maintain essential water, wastewater and drainage systems for Regina and surrounding communities to protect public health and property. This department includes the following branches funded through the Utility:

- Water Operations Branch
- Water and Sewer Construction Branch
- Sewer and Drainage Operations Branch
- Water, Wastewater, and Drainage Engineering Branch
- Wastewater Treatment Branch
- Business Support Branch

Strategic and Business Services (City Operations Division)

Provide strategic leadership for City Operations by delivering results through aligned planning; coordinated administration & communications; research & policy development and; performance & measurement reporting. This area also provides customer service for Utility customers through the Service Regina branch. The Utility budget for this department includes:

- 33% of the overall cost of these services

Construction and Compliance Department

This department provides the planning, design, and review services that support the new infrastructure the City needs to grow and thrive. It also provides drafting, infrastructure records, infrastructure coordination, and geomatics services to the corporation. The Utility budget for this department includes:

- Infrastructure Development Branch – Water/Wastewater and Drainage work units
- 40% of the remainder of the department, excluding Infrastructure Development Branch Roadways work unit

Finance Department (Corporate Services Division)

Provide accurate and timely billing and collection information to ensure the financial health of the Utility and to accomplish our commitments to customer satisfaction and business excellence. The budget for this department includes:

- Utility Billing Branch
- Direct charges for one FTE of Financial Analyst resources

Information Technology Department (Corporate Services Division)

Provide collaborative leadership and support in technology, information and services; enabling our customers to meet their business outcomes. The budget for this department includes:

- Application development staffing directly responsible for the Utility Billing system as well as 0.5 FTE of database administration resources.

Communications (Office of the City Manager)

For the Water & Sewer Utility, the Communications Branch provides public communications for the Utility. The Utility Budget includes:

- Direct charges for communications for the utility, along with one FTE of staff resources

Buffalo Pound Water Administration Board

The Board was formed as a partnership between the Cities of Moose Jaw and Regina and sells wholesale water to both Cities.

Water

Water System Overview

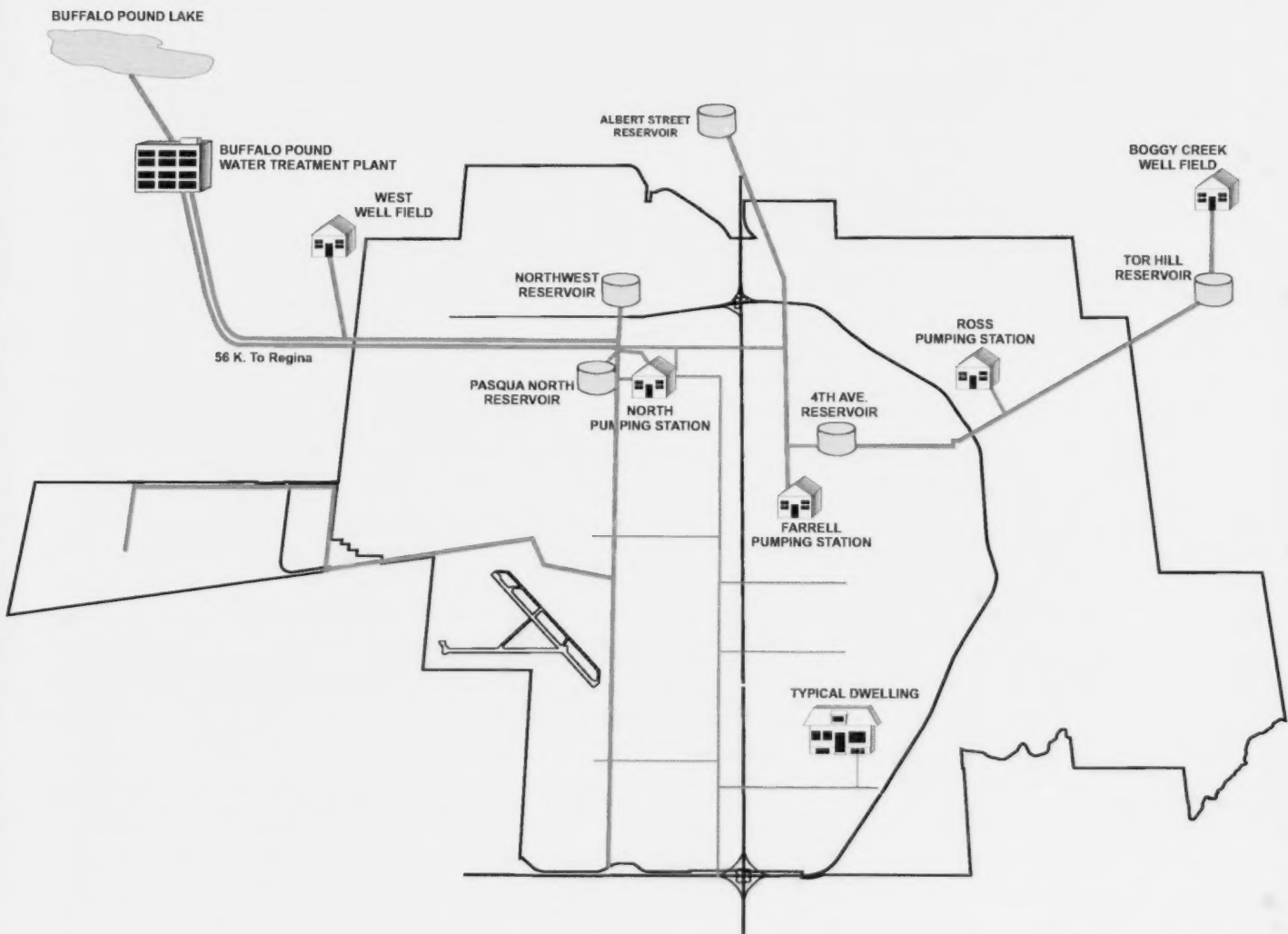
The water supply, pumping and distribution system provides water for residential and commercial use and fire protection. The system serves a population of approximately 200,000 including all residents and businesses in the city limits and a number of customers outside the city. Service goals include:

- Providing water that meets or exceeds Provincial water quality standards and objectives.
- Providing water at adequate pressure and in sufficient quantity to satisfy the requirements for domestic and commercial use, irrigation and fire protection.
- Identifying and implementing improvements to the water system through long range planning, monitoring, improved operation, capital works and new technology.

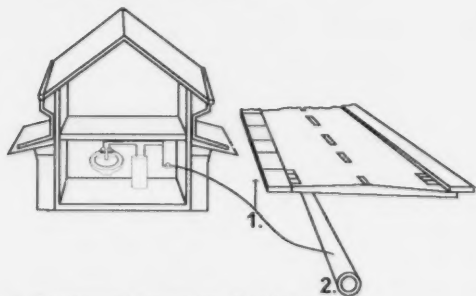
Components of the water system shown in the map on the next page include:

- **Buffalo Pound Lake and Wells** – All water needs are provided from Buffalo Pound Lake. There are wells available for backup purposes. The well water is chlorinated, but does not require further treatment to meet current health standards.
- **Buffalo Pound Water Treatment Plant** – Water from Buffalo Pound Lake is drawn and pumped three kilometres to the Buffalo Pound Water Treatment Plant, a facility owned jointly with the City of Moose Jaw. At the plant, the water is mixed with coagulants that cause algae, bacteria and other impurities to clump together so that they settle out of the water. The water is then filtered and chlorinated. During warmer weather, the water is passed through granular activated carbon to improve the taste and odour.
- **Supply Pipelines** – From the Buffalo Pound Water Treatment Plant, the water is pumped through a 56 km pipeline to the City's water distribution system. The pipeline has been twinned to provide increased capacity and reliability of the water supply. A number of other supply pipelines transport water from wells to reservoirs.
- **Reservoirs** – Five storage reservoirs are used to store water to meet peak demands and ensure that there is an adequate supply of water available for firefighting and high usage periods. The reservoirs have a combined usable storage capacity equal to about one and one-half days of average water use.
- **Pumping Stations** – There are three pumping stations (North, Farrell and Ross) that are used to pump water from reservoirs into the distribution system as necessary. A fourth pumping station has been constructed as part of the development of the second pressure zone in the north of the City. This station is expected to be commissioned in 2014.
- **Distribution System** – The distribution system consists of over 1,080 kilometres of pipelines ranging in size from large 1,067 mm diameter trunk mains to 100 mm distribution pipes. The pipelines are made of various materials including steel, cast iron, concrete, asbestos cement (AC), polyvinylchloride (PVC) and high density polyethylene (HDPE). The distribution system also includes over 6,000 valves that allow the water to be turned off to facilitate repairs and maintenance.
- **Service Connections** – Distribution pipes are connected to a customer's water line through a service connection.
- **Water Meters** – Water meters measure water consumption which use automated meter reading (AMR) equipment to transmit meter readings to a mobile data collection unit.

WATER SYSTEM



SERVICE CONNECTION



1. Service Connection (Curb Box)
2. Watermain

— Supply System

— Distribution System

Water System Objectives

The Long Term Water Utility Study, initially completed in 1993, covered all aspects of the water system, including projected future water requirements, the condition of the existing system components, and a review of the system operations. The Study was adopted by City Council as the city's long term water supply plan. In 1998, a portion of the Study was updated and resulted in a decision to improve the Buffalo Pound supply pipeline and pumping system rather than construct a ground water treatment plant. A Study update was completed in 2006 and provided recommendations for water system improvements for the next 20 years.

As part of the Study, a number of objectives were established. These objectives continue to guide the water system operations today, and include:

- **Water Quality** – The City adopted the *Guidelines for Canadian Drinking Water Quality, 4th Edition* published by Health Canada as the basis for its water quality objectives. These are the most complete guidelines established in Canada. The standards, adopted by Saskatchewan Environment, regulate the operation of all waterworks in Saskatchewan.

For parameters not included in the *Guidelines*, the City has reviewed standards listed by other authorities and adopted appropriate criteria. Some parameters are for substances for which there are aesthetic concerns rather than health concerns, such as iron, manganese and hardness. Other parameters are for substances to which health concerns have been linked but not proven, such as aluminum and trihalomethanes.

- **Water Conservation** – An enhanced Water Conservation Program was initiated in 1991 to reduce the per capita water consumption and the short term peak water demand. The City to date has been successful in meeting the targets that were set for the program.
- **Reliability** – The City established an objective for the reliability of delivery, defined as ensuring water will be available within the limits of minimal local disruptions for system maintenance and rare large-scale disruptions due to unforeseen catastrophe. Specific objectives are:
 - Mandatory water rationing should occur less than one year in ten.
 - Service should be restored within 24 hours in the event of local service disruptions such as water main breaks and connection problems.
 - All reasonable steps should be taken to ensure that large-scale disruptions do not occur. These steps include ensuring that there is sufficient redundancy in the system so that alternate facilities can be used in the event of a failure in part of the system.
 - Alternate power sources should be available in the event of a main power failure.
 - Hydrants should be installed and maintained to meet the requirements of the National Fire Code.
- **Water Pressure** – Water must be delivered to customers under pressure. It is desirable to maintain pressure standards between a minimum and maximum range. The pressure under which water is delivered to a customer depends upon many factors, including the consumption by other customers, pumping capabilities, pipe size, velocity of the water through the system, and the design of the water system.

Water pressure can be controlled to a certain extent through the operation of pumps and other components of the system. However in some instances, system changes may be necessary to meet pressure standards.

As part of the Long Term Water Utility Study, desirable ranges for pressure and velocity were identified and system improvements were recommended where conditions fell outside of these ranges. Work is currently underway to design and construct a second pressure zone to address lower pressures in the north end of the city.

- **Efficiency of Operations** – Electricity used in pumping water is a significant cost. This cost is a factor of the efficiency of the pumps as well as the hydraulics of the system. Pumping operations are regularly reviewed to identify where system improvements or operational changes could reduce electrical costs. Changes are pursued when cost-effective.

Water Supply

Buffalo Pound Lake now provides 100% of Regina's water needs. The water is treated at the Buffalo Pound Water Treatment Plant, which is jointly owned by the cities of Regina and Moose Jaw. It was built in the 1950s in order to provide water for those two cities. The facilities are administered by the Buffalo Pound Water Administration Board, which consists of two members appointed by the City of Regina and one member appointed by the City of Moose Jaw.

Although the plant is operated as a separate entity, there is a high degree of communication and cooperation between the plant operators and the two cities.

On an annual basis, the Board establishes a general water rate. The rate is established on a cost-recovery basis. The 2014 rate will be \$227.15 for one million litres, a 1.0% increase over the 2013 rate. The increase is expected primarily due to rising costs for electricity, increases in unit prices for treatment chemicals, equipment price increases, and increases for wages and benefits.

Since Buffalo Pound Lake is shallow and prone to the growth of algae and other organic materials, treatment of the lake water is challenging. Over the last ten years, the lake water has required higher levels of treatment to provide water that meets the City's water quality objectives.

The City's budgeted 2014 cost of water purchased from Buffalo Pound is approximately \$7.4 million, or about 56.3% of the total costs of the Water Supply, Pumping and Distribution Program, or about 14.6% of total Utility costs excluding debt and transfer to the General Operating Fund.

Future planning for the plant must address new and anticipated regulations related to health effects. The review and update of the City's Long Term Water Utility Plan includes a study of the Buffalo Pound Water Treatment Plant. Results of the study include:

- **Disinfection** – The plant uses chlorine for treatment and disinfection. Chlorinating naturally occurring organic material results in the formation of disinfection by-products known as trihalomethanes and haloacetic acids, which are harmful to human health. The Study recommends reducing the use of chlorine if possible in conjunction with the addition of ultraviolet light (UV) disinfection which is effective in reducing risks associated with cryptosporidium. A capital project to implement UV disinfection is currently underway with commissioning anticipated in 2014.
- **Taste and Odour Control** – The plant uses granular activated carbon and powdered activated carbon to control taste and odour generated by algae in Buffalo Pound Lake. The percentage of time that taste and odour control is required has been increasing for a number of years. The Study discusses the performance of a detailed analysis of additional contactors versus additional storage for granular activated carbon but recommended a third screw pump and four additional contactors.
- **Treatment Residuals Management** – The treatment processes remove particulate matter along with approximately 6% of the total water volume from the lake water. This residual must then be treated

and disposed to the environment. The existing wastewater lagoons are overloaded and under review.

- **Water Stability** – Treated water is slightly corrosive which leads to the softening of concrete tanks in the water treatment plant and the slow deterioration of piping and fittings in the water distribution system which contains metal. Corrosion control in the form of protective coatings for concrete tanks and pH adjustment of treated water is recommended in the Study. Subsequent study indicated that concrete deterioration is not a cause for immediate concern and is not a current priority.

Work is ongoing with an engineering consultant engaged to review upgrade concepts identified in the 2006 update to the Long Term Planning Study, and to move forward on predesign and detailed design of confirmed upgrades over multiple year capital program.

A Waterworks System Assessment (WSA) was completed for the Buffalo Pound Water Treatment Plant in 2010. WSA's are required every five years in accordance with Saskatchewan Environment's 2002 Water Regulations. The WSA evaluates current performance, level of optimization, functionality, capability, efficiency and sustainability of the waterworks and identifies required improvements. Recommendations from the 2010 WSA are currently under review.

As part of the total water purchase costs the two cities also contribute an amount equal to 10% of the general water charges to a Capital Replacement Reserve used to pay for replacement and upgrading of equipment in the plant. Costs for major improvements to the plant are shared with the City of Moose Jaw. The cost-sharing ratio is determined by the percentage ownership of each City, which at the present time is approximately 73% for Regina and 27% for Moose Jaw.

Regina can also draw water from 9 wells located in and around the City. Wells currently are available for emergency water supply in the event of a failure in the Buffalo Pound Water Supply; however, the amount available from the wells is less than the City's typical daily needs. The well water meets current regulatory standards but has levels of iron, manganese and hardness that do not meet aesthetic objectives. These minerals can cause staining on fixtures, as well as the appearance of "discoloured" water. The minerals also cause problems by forming deposits in the water system, requiring more frequent maintenance.

A number of tests are carried out to ensure that water meets quality objectives. Tests include:

- Water quality at the Buffalo Pound Water Treatment Plant is extensively monitored. On-line analyzers are used to monitor the major parameters. The water is continually monitored after every treatment stage. Laboratory staff perform over 25,000 analyses per year monitoring 65 different water quality parameters. The cost of these procedures is included in the general water rate for water purchased from Buffalo Pound.
- Tests are also carried out at various points in the City's water supply and distribution system. Regular sampling and testing is done in order to comply with provincial requirements for the operation of the water system, as well as to ensure the City's water quality objectives are met.

Test results show that the water supply meets all regulatory guidelines.

In addition to carrying out testing of treated water, steps are taken to safeguard the water supply. Identification and prevention of possible sources of groundwater contamination is an ongoing process. Saskatchewan Watershed Authority in conjunction with stakeholders completed a Source Water Protection Plan for the Upper Qu'Appelle and Wascana Creek watersheds in 2008.

Water Pumping

Three pumping stations are used to pump water from reservoirs into the distribution system. The operation of all stations must be coordinated along with supplies from Buffalo Pound and other components of the supply system such as the reservoirs. Since electrical costs are a major component of this operation, it is important that the pumps are operated in an efficient manner. Water pumping must also be provided when electrical power failures occur.

In order to coordinate the operation of each station and to operate the pumps in an efficient and reliable manner, system data is recorded and monitored. This information is obtained from a computerized Supervisory Control and Data Acquisition (SCADA) system.

Water Distribution

The water distribution system consists of buried pipelines made of cast iron, asbestos cement (AC), polyvinylchloride (PVC) and high density polyethylene (HDPE). Steel is used for large supply mains exceeding 500 mm in diameter. Cast iron pipe was installed from 1904 until the 1940s. AC was used throughout the 1950s, '60s and '70s. AC and PVC pipe comprise over 50% and 30% respectively of the 1,080 kilometre of mains in the system. Approximately 107 kilometres of cast iron pipe has been replaced with PVC pipe since 1980. Some cast iron pipe remains due to location and size considerations (intersections, 400 mm diameter and over) and will be replaced as the need and opportunity arises. The replacement of cast iron pipe with PVC pipe has allowed for significant savings in maintenance repairs.

Watermain breaks are a primary cause of water service disruptions, water losses and discoloured water. The frequency of breaks is influenced by the pipe materials, weather, age and location. The cast iron and asbestos cement pipes have a failure rate of approximately 0.3 breaks per kilometre.

Water Quality Monitoring

Water quality monitoring activities include:

- Administering the Permit to Operate Water Works for operation of the water system, including water quality monitoring of all water sources and the distribution system, maintaining records related to the safety and operation of the water system and ongoing reporting to the Ministry of Environment.
- Carrying out supplemental testing to gather water quality data from the water distribution system.
- Communicating information about water quality to the public.
- Efforts to protect the City's water source at Buffalo Pound Lake and the Regina area aquifers.
- Upgrades to the City's water quality data collection and management system through the use of "WaterTrax", an internet-based database service. WaterTrax provides water quality test results directly from testing labs, as well as notifications and alarms to users. Reports can be generated as required by regulators.

Water Loss Reduction

All water utilities experience a certain amount of water loss through leakage, breaks, unauthorized consumption, meter inaccuracies or data handling error. In 2006, the City of Regina changed the method for reporting water loss. The International Water Association (IWA) Water Loss Task Force has produced an international best practice standard approach for water balance calculations and the estimation of water loss. This best practice has also been adopted by the American Water Works Association (AWWA) and by the Federation of Canadian Municipalities (FCM) InfraGuide Best Practice "Water Use and Loss in Water Distribution Systems".

The international best practice performance measure advocated by the IWA and AWWA is the Infrastructure Leakage Index (ILI). The ILI is defined as the ratio of Current Annual Real Losses (Real Losses defined as physical water losses from the pressurized system up to the point of customer consumption) to the Unavoidable Annual Real Losses (UARL defined as a theoretical reference value representing the technical low limit of leakage that could be achieved if all of today's best technology could be successfully applied). The ILI is a highly effective performance measure because it is:

- Based on a calculation that has been tested globally;
- Unit-less and based on real water loss;
- System specific taking into account operating pressure, service connection length, pipe condition and water meter location; and
- Comparable to an international data set.

The 2011 calculated ILI of 3.63 for the City of Regina was within the "Good" Technical Performance Range of 2.0 to 4.0, but there is potential for marked improvements. For comparison purposes an ILI index of 1.0 to 2.0 is within the "Excellent" Technical Performance Range and indicates that further water loss reduction, although possible, may be uneconomical.

The following table identifies the water loss between 2008 and 2012:

Water Volumes (million cubic metres)	2008	2009	2010	2011	2012
Total Water Supplied	28.0	27.6	26.0	27.5	29.2
Billed Consumption	23.2	22.6	21.1	22.1	22.7
Unbilled Consumption	4.8	5.0	4.9	5.4	6.5
Unbilled Consumption as a Per Cent of Total Water Supplied (%)	17.14	18.12	18.85	19.64	22.26

Unbilled consumption includes both deliberate uses, such as fighting fires and flushing hydrants and water lines, and unintended uses, such as leaks.

Water Consumption and Conservation

The 2013 budget is based on an estimate of billable water consumption of almost 23.1 million cubic metres. About 58% of the consumption (13.5 million cubic metres) is for residential properties, 11% (2.5 million cubic metres) for multi-residential properties, and 31% (7.1 million cubic metres) is for non-residential properties.

The City has had a Water Conservation Program since 1985 and initiated an enhanced program in 1991. The primary goals of the program are to reduce the average per capita water consumption and the peak day water use.

The following table provides the history of metered water consumption.

Metered Water Consumption
(Million Cubic Metres)

<u>Year</u>	<u>Metered Water Consumption</u>
1995-1999	24.4*
2000-2004	23.8*
2005-2009	22.7*
2010	21.1
2011	22.1
2012	22.7

* Five Year Average

The Water Conservation Program consists of identifying information that should be provided to the public on methods of conserving water, and communicating the information by means such as:

- Web page information.
- Xeriscape landscaping information available on the website.
- Matching grant program for schools.

Cross Connection Control and Backflow Prevention Program

Water quality can be compromised by the introduction of contaminants into the distribution system. This can occur wherever there is a cross connection, which is a link between the drinking water supply and a source of contamination such as a pesticide container on a garden hose or a boiler filled with anti-corrosion chemicals. Various conditions can cause backflow and/or backpressure in the water supply system. This can cause the drinking water to move in the opposite direction and take with it any materials it is in contact with or mixed with. The result is the water supply to a building or neighbourhood becomes polluted or contaminated.

The Cross Connection Control and Backflow Prevention Program was established in 1996 to reduce the possibility of contamination from such causes. Since the program was established, all new facilities have been reviewed for backflow prevention requirements through the building permit process. All existing commercial, institutional and industrial facilities are being inspected by the City. Any backflow requirements are identified and a one-year time frame given to become compliant.

The four primary components of the program are:

- Public education and awareness.
- Inspections of commercial, industrial and institutional facilities.
- Administration of the annual testing of testable backflow prevention assemblies.
- Review of appropriate building permits for new facilities.

Wastewater

Wastewater System Overview

The wastewater collection and treatment system collects sewage from residential, institutional, commercial and industrial customers in the city. Wastewater treatment and final effluent meet provincial environmental standards. Service goals include:

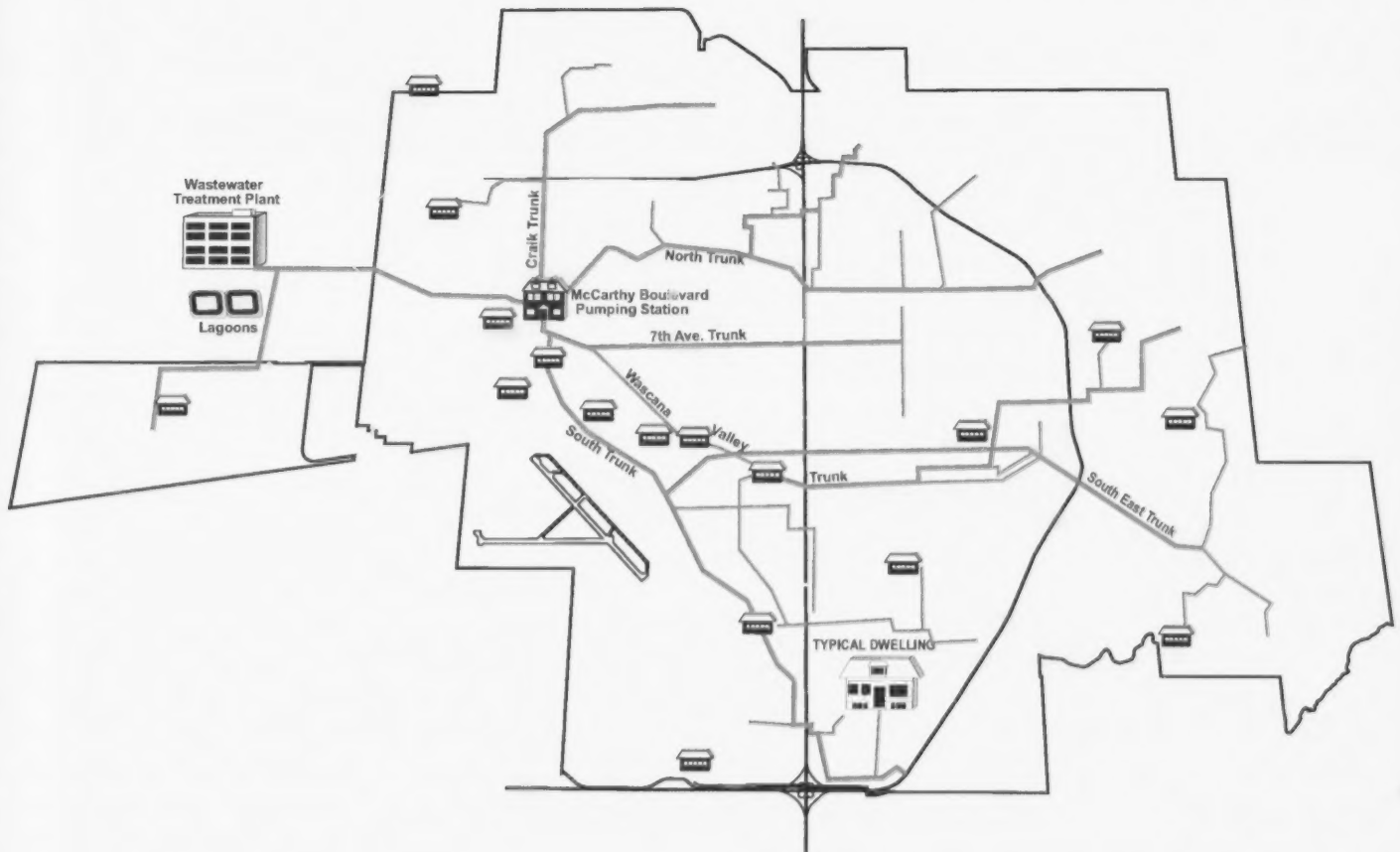
- Collecting domestic, commercial and industrial wastewater in the City and reliably delivering it to wastewater treatment facilities.
- Producing a treated wastewater effluent that is biologically and physically safe for the environment and which meets the requirements of the provincially issued operating permit.
- Ensuring solids removed from the wastewater are treated and disposed of in an environmentally responsible manner.

Components of the wastewater system shown in the map on the next page include:

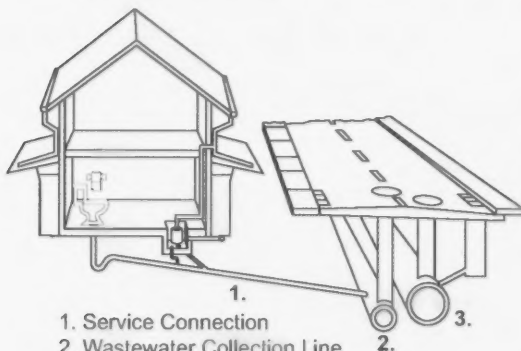
- **Service Connections** – Building plumbing systems are attached to the wastewater collection system by a service connection pipe. The City owns and is responsible for the maintenance of the service connection pipe on the "City side" of the property line.
- **Collection Mains and Trunk Mains** – The service connection pipes are attached to wastewater collection mains, typically 200-250 mm in diameter. The collection mains drain into trunk mains which are 300 mm or more in diameter. The system includes approximately 860 kilometres of pipeline.
- **Manholes** – Over 15,000 manholes provide access to the wastewater collection system for maintenance and repair.
- **Lift Stations** – Wastewater flows through the collection system by gravity. In low-lying areas in the city, lift stations must be used to pump the wastewater to collection and trunk mains at a higher elevation. Wastewater then continues to flow by gravity from that point eventually reaching the McCarthy Boulevard Pumping Station. There are 18 lift stations in the wastewater collection system.
- **McCarthy Boulevard Pumping Station** – All wastewater collected in the City flows to the McCarthy Boulevard Pumping Station. The station provides screening and continuous transfer of wastewater from the collection system to the wastewater treatment facilities five kilometres west. The McCarthy facility is capable of transferring wastewater at up to four times the average daily rate.
- **Septage Receiving Station** – The Utility currently provides a service by receiving trucked liquid waste at a location at the Wastewater Treatment Plant. When the upgrade at the Wastewater Treatment Plant is completed, this location will no longer be available. In 2014, work will begin to develop an alternate location for a septage receiving station, to be completed prior to mid-2016.
- **Wastewater Treatment Plant** – The plant processes wastewater through four stages of treatment:
 - Primary treatment removes sand, grit and organic material from the sewage.
 - Secondary treatment reduces dissolved organic material through the use of aerated lagoons.
 - Tertiary treatment removes phosphorus, algae and suspended solids by using aluminum sulphate and polymer.
 - Ultraviolet light is used to disinfect the effluent before it is released into Wascana Creek.

A major upgrade project will be delivered through a P3 model to comply with new regulations prior to the end of 2016.

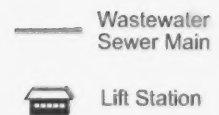
WASTEWATER SYSTEM



Service Connection



1. Service Connection
2. Wastewater Collection Line
3. Drainage Line (Storm Sewer)



Wastewater System Objectives

The provision of wastewater collection and treatment services is critical to the health and environment of the citizens of Regina and surrounding area. Objectives for wastewater collection and treatment are:

- **Quality of Sewage Effluent** – Treated wastewater from the City's wastewater treatment plant is discharged into Wascana Creek, which flows into the Qu'Appelle River upstream from the town of Lumsden. Federal and Provincial agencies establish criteria for sewage effluent that each wastewater facility in the province must follow. The major criteria are total phosphorus, fecal coliform bacteria, pH, biological oxygen demand and suspended solids in the treated effluent discharged to Wascana Creek.
- **Reliability of the Collection System** – Improperly functioning wastewater collection systems cause inconvenience, health and safety concerns. Grease and solids build-up, deterioration of pipes, sags and breaks in wastewater collection lines and at connections caused by shifting soil, tree roots and foreign materials in the lines cause problems such as blockages and reduced capacity. To prevent these problems a regular inspection and maintenance program is required.
- **Relining/Rehab Program** – A successful relining and spot repair program has been ongoing in the City for many years at locations where work is identified in conjunction with roadways programs. This initiative has been expanded to address additional locations proactively before they deteriorate to the point that excavation and replacement is our only option. The use of this trenchless technology greatly reduces rehabilitation costs and disruption to the public and the customer.
- **Separation of the Drainage System from the Wastewater Collection System** – The wastewater collection and treatment system is adequate to handle the day-to-day wastewater flows from the city. During rainfall and snow melt events, drainage water enters the wastewater collection system through basement sump pits connected to weeping tile drainage, catch basins inadvertently connected to the wastewater collection system, and infiltration through pipe cracks and openings such as wastewater manhole covers. Reducing the amount of drainage water entering the wastewater collection system can postpone large expenditures required for trunk mains and treatment plant capacity expansions. Work is being done to reduce infiltration to both new and existing wastewater mains and trunks.
- **Odour Control** – One of the by-products of wastewater collection and treatment is odour. Such odours are unpleasant for nearby residents and staff. Reduction of odours is accomplished by the use of containment, chemicals and aeration lagoons. The aeration equipment at the treatment facilities injects oxygen into the wastewater, preventing a septic environment that produces strong odours.
- **Efficiency of Operations** – Electricity is primarily required to operate pumps and aeration blowers. Chemicals such as aluminum sulfate and polymer used to remove phosphorus are a significant cost of operating the wastewater treatment plant. To minimize costs, it is important to make effective use of chemicals required to meet effluent targets. The most efficient use of electricity, chemicals and other inputs is accomplished by automatic process control and laboratory based performance information at all stages of the treatment process.
- **Maintaining Treatment Capacity** – Regina uses five aeration lagoons in its secondary treatment process. Over the years, as solids settle to the bottom of the lagoons and aeration systems deteriorate, capacity is diminished. To maintain treatment capacity, old lagoons must be refurbished.

Drainage

Drainage System Overview

The drainage system collects water from rainfall and melting snow in and around the City and conveys it to Wascana and Pilot Butte Creeks. The system serves over 65,000 residential and commercial properties. Service goals include:

- Collecting and controlling drainage water within the city to minimize inconvenience, property damage and danger to the public.
- Monitoring the potential for flood conditions in Wascana Creek and the drainage channels and carrying out flood control measures as required.

The **Minor Drainage System** consists of the underground piping system that collects and transports small to medium amounts of drainage from rainfall, snow melt and minor storms. Components of the minor system include:

- Catch Basins – Over 25,000 catch basins located in streets and open space areas collect water and direct it into the drainage lines. Catch basins are designed to keep sand, silt and other matter out of the piping system by causing it to settle to the bottom of the catch basin.
- Lines, Mains and Trunks – There are over 700 kilometres of drainage lines located beneath streets. Lines and mains range from 200 mm to 1,200 mm in diameter, with trunks over 1,200 mm.
- Manholes – Over 15,000 manholes provide access to the system for maintenance and repair.
- Lift Stations – Drainage water flows through the system by gravity. There are low-lying areas where lift stations are used to pump the drainage water to a higher elevation. The water flows into a lift station at a low elevation, and is pumped to a higher level where it continues to flow through a pipe or channel. There are 13 lift stations in the drainage system.

The **Major Drainage System** is used when drainage water exceeds the capacity of the minor system and must flow over land. The major system is designed so that water will flow down roadways and land easements. Components of the major system include:

- Graded Roadways, Land Easements, Swales, and Lots – In order for the runoff water to flow over land to a point where it can be collected, the surface area must be properly sloped.
- Dry Bottom Detention Facilities – These are lower land areas constructed in open space areas such as parks. The detention facility contains outlets to and from the minor system. During periods of heavy rainfall, water that would otherwise overload the minor system enters the detention facility and is stored temporarily. The water from the detention facility then flows back into the minor drainage system at a later time when flows have gone down.
- Lake (or Wet) Retention Facilities – Lakes such as the ones in Lakeridge and Windsor Park are similar to dry bottom detention facilities, except they normally contain water all year for aesthetic reasons. When the minor system is overloaded, the water in these ponds rises, and then drops when the excess water flows back into the minor drainage system.
- Underground Detention Tanks – Underground detention tanks are also used, particularly in some of the downtown areas, to store excess water temporarily until it can be accommodated by the minor drainage system.

- Drainage Channels and Creeks – Drainage water empties into the drainage channels or Wascana Creek. The drainage channels function as very large drainage lines, with earthen banks used to control the water rather than enclosed pipelines. The drainage channels carry the runoff to Wascana Creek. Drainage from the Rowatt Flood Control Project south of Regina flows to Wascana Creek through constructed channel within the City Limits.

Although the major and minor systems are described as separate systems, they are part of an overall drainage system and must work in conjunction with each other. The systems are depicted in the map on the next page.

Drainage System Standards

Standards for drainage system design are normally expressed in terms of the size and type of storm a system can theoretically handle. For example, a drainage system may be designed to handle a 1:5 year storm, which means that it can handle the size of storm that statistically only occurs once in five years in the area. A drainage system designed to handle a 1:100 year storm would be able to handle the size of storm that statistically occurs once in 100 years in the area.

Statistical information is obtained from the Atmospheric Environment Service of Environment Canada to determine storm sizes. In the past, rainfall data was only available from the airport, but three additional data collection points have been added around the City since rainfall can vary significantly by area. Computer modelling is then done to determine the size of other storms.

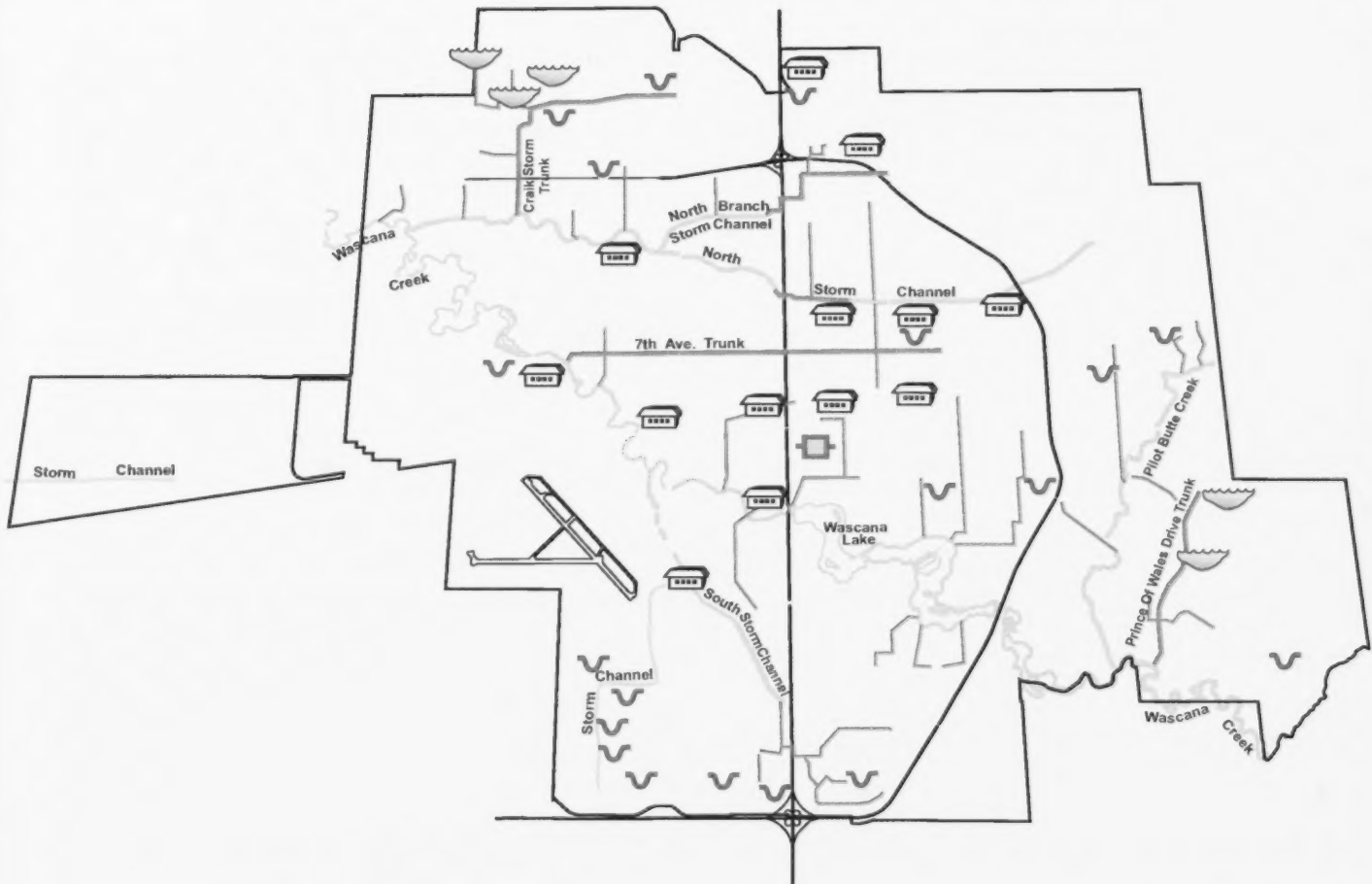
The following are some of the major rainstorms that have occurred in Regina over the past 30 years:

June 1975	1:25 year storm
July 1983	1:100 year storm (108 mm of rain in four hours)
June 1994	1:25 year storm
August 1995	1:25 year storm (severe hail)
July 2001	1:100 year storm (50 mm in one hour)
August 2004	1:100 year storm (76 mm in one hour)
September 2010	1:10 year storm

Factors examined in determining the effective "size of storm" include:

- Total rainfall volume.
- Intensity of rainfall – a storm that drops 100 mm of rain in one hour is much more difficult to handle than one that drops 100 mm over six hours.
- Previous rainfall – if the ground is saturated before the storm, no additional water can soak in. Flows in the drainage system are therefore greater.







DRAINAGE SYSTEM



Drainage of a Residential Property



1. Drainage Line (Storm Sewer)
2. Catch Basin
3. Wastewater Collection Line

-  Lift Station
-  Retention Pond
-  Dry Bottom Detention
-  Underground Detention
-  Storm Sewer Main
-  Storm Channel

Standards for drainage systems have been raised over time, and have been applied to new developments. However, it is very costly to retroactively apply higher standards to existing development. Details of the standards include:

- **New Development Standards** – The “minor” drainage system consists of catch basins and underground lines that quickly collect and transport water. The “major” drainage system, consists primarily of aboveground facilities such as roadways, easements, swales, and detention and retention facilities that can handle larger volumes of water.

For new developments in the city, minor systems must be designed to handle a 1:5 year rainfall event. This corresponds with the general standard used across North America. While a higher standard would provide a higher level of service, the cost to construct underground facilities to handle larger storms is prohibitive. The major systems must be designed to handle a 1:100 year event.

- **Existing Development Standards** – The City has adopted a target of 1:5 year events for existing minor systems, and 1:25 year events for existing major systems. Some areas of the city do not meet these targets. In the early 1980s, a program to study the drainage problems was initiated to identify solutions and carry out remedial measures to mitigate drainage issues. A Drainage Master Plan designating 17 areas was adopted and consolidated and updated in 2009. Conditions in each area are assessed, problems identified and potential solutions proposed. Over time, work required to address the problems is carried out through the capital program.

Most of the property damage caused in Regina during intense rainstorms has been the result of basement flooding. The flooding was caused by runoff water entering the wastewater collection system, resulting in sewer overload and back up into basements. Although the drainage system is separate from the wastewater collection system, there are a number of ways stormwater can enter the wastewater collection system. These include:

- Some older buildings still have roof downspouts connected to the wastewater collection system.
- Runoff water on lots with poor grading adjacent to the building enters weeping tiles and collects in basement sump pits, which then drain into the wastewater collection system.

The City has established an objective to reduce direct connections between drainage and the wastewater collection system. An objective has also been established to reduce the runoff water entering the wastewater collection system from basement sump pits by educating homeowners about steps they can take to prevent such problems.

The most well designed system cannot function effectively unless it is properly maintained. To ensure the system functions as designed, the following objectives have been established:

- Drainage lines over 450 mm are regularly inspected and cleaned as required.
- Catch basins in areas where leaves are a problem are typically cleaned every two years and outlying areas are cleaned on a five-year cycle.

The North and South storm channels are an important part of the City of Regina's storm water management system. The channel collects storm water from North and South Regina and discharges into the Wascana Creek which exits near the Joanne Goulet Golf Course on the northwest side of the City.

The storm channel is divided into sections such that the overall system is dredged on a 7-year cycle with a portion completed each year.

Dykes along Wascana Creek have been constructed and flood plains are maintained to contain creek flooding. The City's objective is to prevent major damage to property and maintain public safety in the event of flood conditions. Toward that end, monitoring is carried out during spring runoff to determine the risk of

flood conditions and appropriate action is taken as necessary. The City has established an objective and capital plans to upgrade dykes to meet a 1:500 flood event level, the provincial standard. The upgrading of the dykes in Riverside was completed in 2005 and those in the Dieppe area were completed in 2007.

In addition to these initiatives, in 2009, the City amended Sewer Services Bylaw No. 5601 so that weeping tile flows are prohibited from entering the wastewater system in newer neighbourhoods under development. This will reduce the likelihood of wastewater backup in newer areas in heavy rainfall events.

Forecasting and Controlling Floods

Forecasting flood conditions begins as the Water Security Agency (WSA) estimates the potential spring runoff based on fall moisture conditions at freeze up and net snowpack accumulations. In early February, WSA releases an initial spring runoff forecast based on current conditions in the Wascana Creek watershed and average climatic conditions to the end of spring runoff. As the spring melt begins, creek flows are measured upstream and monitored as they reach the City and pass through. The City prepares an appropriate response to protect property and ensure public safety until spring runoff is complete.

Annual budgets for flood control activities are prepared assuming spring runoff levels of an average year. Under average conditions, there is no need for special flood control measures such as temporary dykes or pumping behind the dykes when drainage line outlets are closed. The budget typically covers the cost of monitoring conditions on Wascana Creek and the drainage channels, as well as putting up barricades in areas where thin ice and water levels could pose a danger to the public.

Though flood conditions on Wascana Creek are relatively rare, in 2011, well above normal snow fall and saturated ground conditions resulted in flood conditions along Wascana Creek. By the middle of April, creek flows were projected to be as high as 105 cubic metres per second, or a 1:50 year event. The actual peak flows reached as high as 75 cubic metres per second, the highest since the record flows of 1974 when peak flows reached 102 cubic metres per second. Although the actual peak flows were not as high as the initial predictions, it was necessary to take significant preventative action to protect property and ensure public safety. Major flood control costs were incurred for the labour and equipment required to produce and deploy temporary sandbag dykes, monitor creek conditions and pump water out of low lying areas.

In 2013, initial peak flow estimates for Wascana Creek in early February were only slightly above normal. They were increased dramatically in early March when WSA revised the official forecasted flow to 90 cubic metres per second (1:50 year event). With the watershed experiencing record snowfall and the potential for an unfavourable fast melt, the City prepared for flows as high as 120 cubic metres per second (in excess of a 1:100 year event), a level that would have eclipsed the record flow of 1974. Mitigation activities were based on this worst case scenario and significant preventative action was taken to protect property and ensure public safety. Along with traditional sandbag dykes in some areas, new rapid deployment flood control barriers and large bulk sandbags were used to reduce the labour and equipment costs of the response. Even with these new methods of flood control, costs were significant. Aided by the long, slow melt, the flow in Wascana Creek peaked on May 7, 2013, the latest peak flow ever recorded for Wascana Creek, at only 32 cubic metres per second or a 1:5 year event.

Home Flood Protection Education Program

This program informs homeowners about the causes of basement flooding and the measures they should undertake on their property to prevent flooding damage from intense summer rainstorms. Information on home flood protection is available through the City's web page. Mitigation measures are required on both City and private property to accomplish neighbourhood service level improvements for managing large summer storm events and minimizing property damage and risk.

Planning and Engineering

The majority of the information regarding water, wastewater and drainage services is provided in the preceding sections of this report. The operating budget summary includes costs related to Planning and Engineering

Objectives for the planning, design, operations and maintenance engineering include:

- **Long Range Planning** – In order to meet customer demands, water, wastewater and drainage systems require high levels of capital investment. It is necessary to anticipate and plan for future requirements so that the necessary future investment can be provided. To accommodate this, the following objectives have been established:
 - Long range capital plans (20 to 25 years) should be carried out regularly for each of the three major Utility systems.
 - Ongoing conditions should be monitored and the long range plans updated as new information becomes available.
- **Effective Management of Capital Program** – City Administration provide planning and design engineering services for the Utility. All capital projects should be completed within their approved standards, timelines and budgets.
- **Establishment of Construction Standards** – Standards are developed for all infrastructure construction, including those relating to the Utility systems. These standards are applied to construction carried out by City crews, contractors and developers. Over time, standards evolve as new construction techniques and materials become available. The objective of these standards is to meet legislation requirements, optimize performance, and minimize the life-cycle cost for the provision of the services.
- **Customer Awareness** – There are a number of areas within the Utility operations where customer actions can collectively affect service and costs. Information is provided to customers to increase awareness. Current programs include:
 - Water Conservation
 - Cross Connection Control and Backflow Prevention
 - Home Flood Proofing
 - Creekwatch
 - Wastewater Discharge Practices

Engineering and Project Management

The Water Works Services Department, the Infrastructure Planning Branch, and Engineering Services Branch are responsible for planning, designing and supervising construction of the Utility systems infrastructure. A primary responsibility is overseeing the annual capital program. Projects carried out range from annual infrastructure renewal projects to less frequent major projects such as water treatment or wastewater treatment plant expansions. Engineering and design work may be done in-house or by external engineering firms. Construction work may be done by City Operations Division crews or by external contractors. The resources used for projects depend upon the nature of the project, the availability of resources, and the expertise required.

Environmental Monitoring

Environmental monitoring activities include:

- Ground water monitoring at the wastewater treatment plant and downstream receiving body water quality.
- Surface water quality monitoring in the City's four retention lakes.
- Stormwater quality monitoring of urban drainage discharge to Wascana Creek and Wascana Lake.
- Snow dumpsite runoff monitoring.

Review of Development Proposals

Much of the City's water, wastewater and drainage systems are constructed by City staff, or by contractors under the direction of City. In the case of new development and re-development of existing areas, developers are responsible for constructing infrastructure including water, wastewater and drainage systems. This construction forms part of the Utility systems, and the City assumes responsibility for operation and maintenance of the systems.

Development proposals are reviewed by the Infrastructure Planning Branch (formerly part of the Development Engineering Department) to ensure design and construction meets City standards. Installations that do not meet City standards are identified and corrected by the developer. In late 2011, Development Engineering reintroduced subdivision inspectors to monitor the quality of work being completed to support the City's rapid rate of growth.

Technical and Engineering Support

City Operations Division technical and engineering staff provide support to the field personnel responsible for maintaining the water, wastewater and drainage systems, and for carrying out capital construction work for projects constructed by City personnel.

In addition, staff from both City Operations Division and Community Planning and Development Division provides construction scheduling, construction coordination and administrative and technical construction management services, which includes:

- Establishing, monitoring, and updating construction schedules.
- Coordinating construction with Utility companies.
- Tracking and monitoring expenditures of various capital projects.
- Estimating the costs of water and sewer construction projects.
- Reviewing and analyzing unit cost information.
- Provide quality and quantity control of construction work.

Customer Service

Service Regina provides front line customer service for the Utility as well as other City services. This priority is applied to all aspects of operations, especially in contact with external customers, but also in dealings with internal customers and in responses to questions and requests for information. Objectives for customer service include:

- Customer applications for water services and disconnections are handled accurately.
- Customers can access information about their bill and receive prompt responses to their inquiries.
- Payments can be made using convenient payment methods.
- All service requests are processed within a reasonable time frame, given the nature of the service required.

Customer call centre volumes are monitored to ensure key performance indicators (KPI) are being met. The two primary KPIs are that calls are answered within 25 seconds, 80% of the time, and that abandoned calls are kept below 5%.

Customer service is accessible by telephone, mail, fax, in-person and electronically via the City's website. Internet requests and e-business inquiries continue to increase and this continues to be an area of focus. Continued awareness of customer needs to access information and services quickly and efficiently in the manner of their choosing is the focus of customer service efforts.

Service Regina's one-stop shop approach provides customers with information about the City's services through one central contact number. By directing customer calls to the area concerned, staff ensure that the customer is dealt with effectively and efficiently at their first point of contact.

Service Regina strives to ensure customer satisfaction on every occasion in the five essential elements of service: timeliness, knowledge and competency, courtesy, fair treatment and final outcome. When all five of these elements are in place, customers rate the services provided highly. The goal of the customer service area is to ensure satisfaction in every one of these areas with every customer.

Billing and Collection Services

Objectives for billing and collection include:

- Customers are billed every month.
- Customers receive accurate, timely, and informative bills.
- New payment methods are introduced where they can provide convenience to the customer, and where they are cost effective.
- Collection action is taken as required.
- Percentages of overdue accounts and uncollectible accounts are at a reasonable level.

The administration of customer accounts and the billing and collection function includes:

- Managing customer accounts, including setting up new customers, discontinuing accounts and transferring accounts from one individual to another. There is also a requirement to manage contracts with out-of-town water users who receive water from the City.
- Managing activities related to water meters includes obtaining meter readings and handling turn ons or turn offs of water service. Customers are divided into automated meter-reading routes so the meters are read according to a monthly schedule.

Water services must be connected and disconnected in response to customer requests and as a result of collection efforts.

- Generating customer bills – Customers are divided into billing cycles so each customer is billed every month.
- Collecting overdue customer accounts using a various collection tools. Interest is added to outstanding balances, which encourages timely payment. When accounts remain outstanding, payment arrangements are negotiated where possible. This includes maintaining a post-dated cheque database, as well as providing equalized payment options for Utility accounts.

Debt Management

This program includes the cost of principal and interest for debt issued to finance Utility capital projects, along with the cost of the debt issue. Debt charges are made up of two elements:

- Interest – This is the cost of interest payments on all outstanding debt.
- Principal repayments – These payments represent the cost to redeem the principal portion of the debt as it matures. The debt management program generally utilizes two forms of debt, either a serial debenture or a bullet debenture. A serial debenture is similar to a mortgage, where a portion of the principal amount of the debt is paid each year, along with interest, until the debt is fully repaid. Alternatively, a bullet debenture generally requires interest payments on a regular basis; however, the principal is only repaid at the end of the term.

The following table shows the existing annual debt charges and debt maturities.

Year	Annual Debt Charges (\$)	Debt Maturities		
		Debt Maturing (\$)	Per Cent of Total (%)	Cumulative Percentage Reduction (%)
2014	45,920.1	44,606	79.5	79.5
2015	1,439.0	906	1.6	81.2
2016	1,402.3	906	1.6	82.8
2017	1,362.4	906	1.6	84.4
2018	1,320.1	906	1.6	86.0
2019	8,041.9	7,846	14.0	100.0
	Total	56,076	100.0	

In 2010, debt in the amount of \$43.1 million was reassigned from the Global Transportation Hub (GTH) to fund the General Utility Reserve. As a result of the reassignment of this debt, no additional debt was required in 2010 to fund the Utility's capital program. This debt is due in 2014.

In 2012, approval was given to issue \$23.0 million in debt. Because of delays in capital investment, issuing of this debt was not required. The projects that were planned to be funded through this debt issue must be allocated funding from the General Utility Reserve.

Additional debt will be required for the 2014 – 2018 Utility Capital Program as follows:

- \$118.3 million in 2017. This debt will be issued as part of the P3 project through the private partner.
- \$25.0 million in 2018.

The Utility Model includes funding for debt issuance costs and the repayment of projected debt issues based on a twenty year term and an interest rate of 4.6% in 2018.

For further details on debt projections for future years, see Utility Capital Funding Section.

Utility Capital Program

Capital Program Summary

	2014	2015	2016	2017	2018	Five Year Total
Capital Expenditures (\$000's)						
Water Supply, Pumping & Distribution	10,780	21,070	25,805	38,905	53,192	149,752
Wastewater Collection & Treatment	11,705	12,655	9,155	11,180	20,980	65,675
Drainage	10,680	5,805	8,205	12,130	18,830	55,650
Other Utility Projects	2,875	3,315	4,825	1,945	1,545	14,505
Total Expenditures	36,040	42,845	47,990	64,160	94,547	285,582
Capital Funding (\$000's)						
General Utility Reserve	22,640	35,845	41,112	45,433	49,300	194,330
Service Agreement Fees - Utility	13,400	4,265	2,775	14,625	16,145	51,210
Debt ¹	-	-	-	-	25,000	25,000
External Contributions	-	2,735	4,103	4,102	4,102	15,042
Total Funding	36,040	42,845	47,990	64,160	94,547	285,582

Note:

1. Debt shown excludes debt to be issued by the private partner for the Wastewater Treatment Plant Upgrade Project. As approved by Council, private party financing for this project is expected to be \$118.3 million.

Infrastructure Overview

Regina has a substantial investment in utility infrastructure, amounting to more than \$2.4 billion in asset value. A challenge for Regina, and other cities, is to generate sufficient funds to maintain these assets. The gap between the annual requirement to sustain the infrastructure and the annual investment is referred to as the "Infrastructure Gap". Regina is a relatively young city and has, to some extent, been shielded from the full impact of its utility infrastructure deficit, until recently, much of the buried infrastructure was still within its expected service life.

In recent years, there has been increased discussion of the infrastructure deficit faced by cities, and the need for additional funding from the senior governments and/or alternate revenue sources for cities. In 2014 the City will pursue funding opportunities as and when they become available.

The *Regina Development Plan, Bylaw No 7877* is the framework for land use and development decisions within the City of Regina. Implementation of the *Regina Development Plan* requires integration of infrastructure requirements into sector and concept plans, which detail the physical and engineering aspects of the new infrastructure along with funding and phasing of the work for green field development. Current development policies are based on the provision of utility services provided in accordance with the Development Standards Manual. The development scenarios adopted in the *Regina Development Plan* result in significant infrastructure requirements and costs which are provided by the City in accordance with the *Administration of Servicing Agreement Fees and Development Levies Policy* adopted by Council.

Section 22.4 of *The Cities Regulations* requires Council to adopt a capital investment strategy that includes the method used for determining capital plans respecting the waterworks. Capital requirements (capital investment strategy) are determined based on engineering and planning studies that take into account the infrastructure requirements of the Utility required to meet the service goals of the Utility, as

determined by City Council or prescribed by legislation. Infrastructure requirements are being addressed through a series of studies. Studies recently completed or underway include:

- The replacement value of the wastewater collection system at current value is over \$710 million. The Wastewater Collection System Assessment Study, completed in 2004, defined requirements for the long-term sustainability of the wastewater collection infrastructure. In 2006, further work was done to investigate inflow and infiltration to the wastewater collection system and a Citywide Wastewater Assessment was initiated in 2010 to assess system performance, which may lead to recommended infrastructure improvements.
- The review of the Long Term Water Utility Plan was completed in 2006. It examines the present condition of Regina's water system, forecasts the requirements for the next 20 years and provides a plan for meeting future requirements. An estimate of the replacement value for the water distribution system at that time was \$300 million, with a further \$400 million for the supply system, including the City's share of the Buffalo Pound Water Treatment Plant.
- The replacement value of the storm drainage system is over \$515 million. The 2009 consolidation of the drainage area reports into the Regina Drainage Master Plan Report indicated that it would require an additional \$226 million (in 2008 dollars) to upgrade all areas of the city to meet a 1:25 year storm water detention standard. At the City's current rate of funding for detention upgrades, the study estimated that it would take 66 years to implement all the recommendations in the plan. This does not include operation, maintenance or life-cycle replacement. The study recommended that more funding be provided in order to implement the plan within 25 years.
- In 2007, the City of Regina partnered with the City of Saskatoon, for the development of a Buried Asset Repair Strategy. Approximately two-thirds of the water distribution and wastewater collection systems were constructed in a thirty-year period between the early 1950s and the late 1970s. In this period, almost all of the water distribution system construction used asbestos cement (AC) pipe. AC pipe has a reliable service life, under the conditions that prevail in Regina, of 50 years. In recent years, there has been an increasing frequency in breaks in asbestos cement pipe. This pattern will likely continue as the system ages and will put a financial strain on the Utility. The strategy is still under review and the City has developed criteria for piloting a replacement program.
- The value and infrastructure requirements of the wastewater treatment plant were documented through the Sewage Treatment Plant Planning Study. The final report was completed in late 2005. The initial Wascana Creek Receiving Environment Study was also completed in 2005. Both studies were used in developing capital plans for the wastewater treatment plant upgrade and will be used to develop future plans to create a receiving environment water quality model.
- In 2011, the City of Regina initiated the pre-design study for the Wastewater Treatment Plant Upgrade Project. This project is required to meet new regulatory requirements as well as provide expanded hydraulic and process capability associated with future City growth. In 2013, a report recommending the use of a P3 delivery model was submitted to Council and approved. The City submitted an application for funding from PPP Canada and was approved for 25% of the capital costs for the Wastewater Treatment Plant Upgrade project. The capital cost of the project, including 15% contingency funding is \$224.3. The following chart shows the funding sources for this project:

Expenditure	Expense Amount (millions \$)	Funding Source	Funding Amount (millions \$)
Capital Cost		Capital Funding	
Construction cost	224.3	PPP Canada Grant	\$58.7
		Private Party Financing	118.3
		Previously approved Capital funding	27.5
		General Utility Reserve	19.8
Total Capital Cost	224.3	Total Capital Funding Sources	224.3

- In 2013, the City adopted its new Official Community Plan (OCP) entitled Design Regina, which will replace the current Regina Development Plan, Bylaw No. 7877. As an input into this OCP, the City completed various Sector Serviceability Studies for future new growth areas of the City. These studies provided valuable information with respect to feasibility of providing water, wastewater and drainage service to potential future new growth areas. The studies provided high level capital cost estimates with respect to providing those services. Subsequent to the OCP, an analysis of how the City will phase and finance the new growth areas will also be informed by the capital costs associated with growth areas, to guide how and where the City will grow next.
- In 2008, to address water pressure in the Northwest quadrant that was not adequate to allow development to continue in certain areas of the city, the City of Regina conducted the Second Pressure Zone study. This study made recommendations for implementing another water pressure zone to provide service new areas and make improvements to water pressure in existing areas. The study also indicated that areas in the Northeast quadrant may require the implementation of a third pressure zone. The sector studies currently in progress will explore that recommendation.

These studies will contribute to determining the infrastructure gap and establishing plans to address it.

Water Supply, Pumping and Distribution

Capital Summary (\$000's)	2014	2015	2016	2017	2018	Five Year Total
Capital Expenditures						
1. Water Supply	-					
- Buffalo Pound Water Treatment Plant Upgrades	-	10,000	15,000	15,000	15,000	55,000
- Reservoir Renewal Program	-	-	-	500	500	1,000
- Supply Line Improvements	-	1,000	1,000	1,000	1,000	4,000
2. Water Pumping						
- Fire & Security Vulnerability Upgrade	-	-	-	-	1,387	1,387
3. Water Distribution						
- Eastern Pressure Zone	250	-	-	12,600	12,600	25,450
- North Pump Station Upgrades & Equipment Replacement	-	-	-	-	12,900	12,900
- Trunk Water Main - Chuka Boulevard from Green Apple Way to Primrose Green Drive to Arens Road	265	265	-	-	-	530
- Trunk Water Main - Kensington Greens buffer strip, from Highway 6 Service Road to Kingbird Road	560	-	-	-	-	560
- Future Water Distribution Main Oversizing	-	100	100	100	100	400
- Water Infrastructure Renewal	9,705	9,705	9,705	9,705	9,705	48,525
Total Expenditures	10,780	21,070	25,805	38,905	53,192	149,752
Capital Funding						
General Utility Reserve	9,705	16,820	19,877	20,378	21,765	88,545
Service Agreement Fees - Utility	1,075	1,515	1,825	14,425	14,425	33,265
Debt	-	-	-	-	12,900	12,900
External Contributions	-	2,735	4,103	4,102	4,102	15,042
Total Funding	10,780	21,070	25,805	38,905	53,192	149,752

Water Supply

Future Years Planned Programs

Buffalo Pound Water Treatment Plant Upgrades

Improvements to replace and expand the facility and equipment are required at the Buffalo Pound Water Treatment Plant to ensure there is sufficient capacity and ability to continue to: meet regulatory requirements, protect public health and safety; and ensure sufficient reliable supply that meets quantity and quality expectations of a growing Community. Improvements will address the impacts of aging infrastructure, regulatory changes, changes in engineering and building standards, industry best practices to protect public health and safety, and growth within the community. This program typically includes inspection, assessment, replacement and rehabilitation work at the Plant and/or Lake. Funding is provided by the City of Regina's Utility Reserve (61.15%), Utility Servicing Agreement Fees (11.5%) and external contributions from the City of Moose Jaw (27.35%).

Reservoir Renewal Program

The City's reservoirs require on-going inspection, rehabilitation and upgrading to maintain expected level of service and ensure the reliability and safety of the water supply system. This program typically includes inspection, assessment, replacement and rehabilitation of water reservoirs and associated equipment and infrastructure. The Utility Reserve funds this work.

Supply Line Improvements

This program inspects, repairs, and replaces main valves, valve structures and other miscellaneous work on the Buffalo Pound supply pipeline and other major supply mains within the City. As the pipelines age, inspection, rehabilitation, and improvements are necessary to ensure the reliability of the water quality and supply to the City and reduce the number of emergency repairs. The Utility Reserve funds this work.

Water Pumping

Future Years Planned Programs

Fire and Security Vulnerability Upgrade - Monitoring

A Water and Sewer Utility – Fire and Site Security Audit Report was completed for the City of Regina in January of 2013. This Audit Report identified shortfalls with regards to fire and site security at the Buffalo Pound Lake Intake Pumping Station, the Buffalo Pound Water Treatment Plant, and at four pumping stations within the City. This project provides for monitoring communication upgrades and CCTV based security monitoring, which will substantially reduce vulnerability. The Utility Reserve funds this work.

Water Distribution

Current Year Programs

Eastern Pressure Zone

In order to maintain current service levels as the city grows, a third Pressure Zone in east Regina is required. While pressure is sufficient to meet minimum firefighting conditions, as new households come on-stream south of the CP railway tracks, customers may notice a decrease in water pressure. In 2014, a study will be completed to determine the appropriate course of action. The cost of a third Pressure Zone is estimated at \$63M, and is shown in the five-year capital plan as a five-year project beginning in 2017. This project is 100% funded from Utility Servicing Agreement Fees.

Trunk Water Main – Chuka Boulevard from Green Apple Way to Primrose Green Drive to Arens Road

This project provides for the detailed design and construction of a of trunk water main along Chuka Boulevard from Green Apple Way to Arens Road to service the Greens on Gardiner subdivision and support potential development to the North of the Greens on Gardiner within the 235,000 population growth scenario. This project is 100% funded from Utility Servicing Agreement Fees.

Trunk Water Main – Kensington Greens buffer strip, from Highway 6 Service Road to Kingbird Road

This project provides for the installation of approximately 280 metres of 600 mm trunk water main along the Kensington Greens buffer strip from the Highway 6 Service Road to Kingbird Road, to support development in the northwest sector. This project is 100% funded from Utility Servicing Agreement Fees.

Water Infrastructure Renewal

The underground water distribution system requires ongoing rehabilitation and upgrading to maintain expected level of service and ensure the reliability and safety of the water distribution system. This program typically includes inspection, assessment, replacement, rehabilitation and upgrading of water distribution mains, fire hydrants, service connections, and other appurtenances and associated structures. The Utility Reserve funds this program.

Future Years Planned Programs

North Pump Station Upgrades and Equipment Replacement

The North Pump Station is a critical asset in City of Regina's water distribution system. Valves at this station are experiencing deterioration due to aging. In addition, due to the construction of a new North Pressure Zone Pumping Station, the demands on the North Pump Station have changed. Some of the existing pumps have become oversized and some are undersized thus becoming inefficient due to the changed demands. Additionally the existing pumps are reaching the end of their working life. This funding will provide for necessary replacement and changes to configuration to ensure optimal operating efficiency. This project is funded through Debt.

Future Water Distribution Main Oversizing

This program provides for the construction of new water distribution mains requiring oversizing to allow for distribution of water to future developments beyond the concept plan area. This project is 100% funded from Utility Servicing Agreement Fees.

Wastewater Collection and Treatment

Capital Summary (\$000's)	2014	2015	2016	2017	2018	Five Year Total
Capital Expenditures						
1. Wastewater Treatment:						
- McCarthy Boulevard Pumping Station Upgrade	-	500	-	2,000	2,000	4,500
- Utility Greenhouse Gas Reduction Program	-	-	-	200	-	200
- Waste Hauler Dump Station	500	4,500	-	-	-	5,000
- Severing McCarthy Boulevard Pumping Station from Wastewater Treatment Plant	500	-	-	-	-	500
- Sludge Management at the Wastewater Treatment Plant	2,000	1,500	1,000	-	-	4,500
2. Wastewater Collection:						
- Harbour Landing Sewage Force Main Extension	1,200	-	-	-	-	1,200
- Lift Station Upgrade	1,100	375	375	200	200	2,250
- New Connector Trunk and Lift Station	-	-	-	-	9,000	9,000
- Sanitary Trunk Main - Chuka Boulevard from Green Apple Way to Primrose Green Drive to Arens Road	625	-	-	-	-	625
- Sanitary Trunk Main - Gordon Road from Aerodrome to Campbell Street	500	-	-	-	-	500
- Sanitary Trunk Main - Kensington Greens buffer strip, from Highway 6 Service Road to Kingbird Road	1,100	-	-	-	-	1,100
- Future Sewer Collection Mains Oversizing	-	100	100	100	100	400
- Sewer Connection Replacement	690	680	680	680	680	3,400
- Southeast Pump Station Storage	3,500	-	-	-	-	3,500
- Wastewater Infrastructure Renewal	-	5,000	7,000	8,000	9,000	29,000
Total Expenditures	11,705	12,655	9,155	11,180	20,980	65,675
Capital Funding						
General Utility Reserve	4,780	12,555	9,055	11,080	11,880	49,350
Service Agreement Fees - Utility	6,925	100	100	100	1,720	8,945
Debt	-	-	-	-	7,380	7,380
External Contributions	-	-	-	-	-	-
Total Funding	11,705	12,655	9,155	11,180	20,980	65,675

Wastewater Treatment

Current Year Programs

Waste Hauler Dump Station

This project provides for the development of a permanent Waste Hauler Dump Station. In the past waste hauler trucks discharged sewage at the McCarthy Boulevard Pumping Station. Upgrades at the pumping station resulted in the relocation of the discharge to a temporary location at the Waste Water Treatment Plant. Planning is underway to identify possible locations and construction options. A majority of waste haulers service rural customers and the City is currently working with the RM of Sherwood to address the station from a regional perspective. This project is currently funded from the Utility Reserve with additional funding anticipated from sharing agreements. It is intended that revenue from the facility will recover construction and operating costs.

Severing McCarthy Boulevard Pumping Station (MBPS) from the Wastewater Treatment Plant

This project provides for one time costs to separate the operations of the McCarthy Boulevard Pumping Station from the Wastewater Treatment Plant. This work will include software and hardware costs for separate Supervisory Control and Data Acquisition (SCADA) systems for the main plant and the MBPS as well as facility costs for renovations to the MBPS. This project is funded from the Utility Reserve.

Sludge Management at the Wastewater Treatment Plant

Sludge accumulation has become an immediate concern at the WWTP, requiring desludging to accommodate ongoing operation of the plant prior to the completion of the major upgrade. This funding will provide for desludging of one lagoon in 2014 and another in 2015 as well as upgrading of the sludge storage facility. This project is funded from the Utility Reserve.

Future Years Planned Programs**McCarthy Boulevard Pumping Station Upgrade**

McCarthy Boulevard Pumping Station requires upgrades involving building repairs and pumping system to continue to provide reliable wastewater conveyance to the Wastewater Treatment Plant. Funding is from the Utility Reserve (85%) and Utility Servicing Agreement Fees (15%).

Utility Greenhouse Gas Reduction Program

This funding will allow for pilot project and/or studies to support City Council's goal to reduce greenhouse gas emissions. This project is funded from the Utility Reserve.

Wastewater Collection**Current Year Programs****Harbour Landing Forcemain**

This project includes extension of the wastewater forcemain from the Harbour Landing Pump Station future build-out of Harbour Landing. Funding for this project is 100% provided from Utility Servicing Agreement Fees.

Lift Station Upgrade

The City's wastewater pumping stations are aging and require upgrading to restore or improve the level of service and to reduce emergency repair costs. This program will include assessment, pre-design, rehabilitation, upgrades and/or replacement of existing pumping stations. The Utility Reserve funds this program.

Sanitary Trunk Main - Chuka Boulevard from Green Apple Way to Primrose Green Drive to Arens Road Boundary

The project provides for the extension of the sanitary trunk main to service North portions of Greens on Gardiner and future development of the Towns. Funding for this project is 100% provided from Utility Servicing Agreement Fees.

Sanitary Trunk Main - Gordon Road from Aerodrome to Campbell Street

This project involves the construction of a deep sanitary trunk sewer along Gordon Road from Aerodrome Road to Campbell Street. Funding for this project is 100% provided from Utility Servicing Agreement Fees.

Sanitary Trunk Main – Kensington Greens buffer strip, from Highway 6 Service Road to Kingbird Road

This project provides for the installation of approximately 280 m of 600 mm sanitary trunk along the Kensington Greens buffer strip from the Highway 6 Service Road to King Bird Road, to support development in the northwest sector. This project is 100% funded from Utility Servicing Agreement Fees.

Sewer Connection Replacement

This program provides funding for maintenance, inspection and rehabilitation of sewer connections to maintain expected levels of service and ensures the reliability of the sanitary sewer system to individual customers. This program typically replaces the City side of sewer connection that have reached the end of their service life or cannot be economically repaired. The Utility Reserve funds this program.

Southeast Pump Station Storage

This project involved expansion of the existing storage for the Creeks Pump Station located in the Southeast required for future new development in the Southeast. Funding for this project is 100% provided from Utility Servicing Agreement Fees.

Future Years Planned Programs**New Connector Trunk and Lift Station**

Funding will be used for the assessment, design and construction of a new connector trunk, lift station and other related components to improve the functioning of the wastewater collection system. Funding for this project will be provided by Debt (82%) and Utility Servicing Agreement Fees (18%).

Future Sewer Collection Mains Oversizing

This program provides for the construction of new sewer collection mains requiring oversizing within new subdivisions for future developments. Funding for this project is 100% provided from Utility Servicing Agreement Fees.

Wastewater Infrastructure Renewal

The Wastewater Infrastructure Renewal Program is currently in progress with funding allocated prior to 2013. The wastewater collection system requires ongoing rehabilitation and upgrading to maintain and improve the level of service and to ensure the system's reliability. This program includes inspections, assessments, relining, replacement, and rehabilitation. The condition assessment and rehabilitation is done both in conjunction with scheduled roadway renewal projects and proactive locations identified in the system. The Utility Reserve funds this program.

Drainage

Capital Summary (\$000's)	2014	2015	2016	2017	2018	Five Year Total
Capital Expenditures						
1. Drainage Systems:						
- Area 2B (Albert Park Detention)	3,800	-	-	-	2,000	5,800
- Area 5 Upgrades	-	-	-	500	6,150	6,650
- Area 6 Upgrades	-	400	-	1,500	-	1,900
- Area 8 Upgrades	-	-	-	-	600	600
- Area 10 Upgrades	-	-	-	450	3,000	3,450
- Area 14 Upgrades	500	-	-	-	2,000	2,500
- Area 1 & 17 Upgrades	-	-	-	2,500	1,500	4,000
- Drainage Pumping Station Upgrading	-	375	375	200	200	1,150
- Area 13 A (Highland Park/Cityview)	500	-	4,500	4,500	-	9,500
- Drainage Infrastructure Renewal	80	2,080	2,080	2,080	3,080	9,400
- Dykes, Drainage Channels and Lake Improvements	400	400	400	400	300	1,900
- The Towns Detention Pond and Drainage Route - Primrose Green Drive to Detention Pond	-	1,750	-	-	-	1,750
- Greens on Gardiner Drainage Route	1,000	-	-	-	-	1,000
- Greens on Gardiner Storm Sewer - Green Water Drive from Green Apple Drive to Green Brook Way	50	-	-	-	-	50
- Harbour Landing Detention Pond (MR12) - Harbour Landing north of Highway No. 1	250	-	-	-	-	250
- North-East Industrial Lands – Agricultural Bypass Ditch	-	300	-	-	-	300
- Detention Pond - New Development in Southeast New	-	500	-	-	-	500
- Hawkstone Detention Pond (F) - West of Argyle Street and South of Rochdale Boulevard	-	-	350	-	-	350
- Northeast Industrial Development - North Storm Channel extension	1,000	-	-	-	-	1,000
- Northeast Industrial Development - Detention Pond	500	-	-	-	-	500
- Detention Pond - Somerset Development	500	-	-	-	-	500
- Detention Pond - Skyview and Northwest Regina (J) and Drainage Route	2,100	-	-	-	-	2,100
- Detention Pond - Future New Development	-	-	500	-	-	500
Total Expenditures	10,680	5,805	8,205	12,130	18,830	55,650
Capital Funding						
General Utility Reserve	5,280	3,255	7,355	12,130	14,110	42,130
Service Agreement Fees - Utility	5,400	2,550	850	-	-	8,800
Debt	-	-	-	-	4,720	4,720
Total Funding	10,680	5,805	8,205	12,130	18,830	55,650

Drainage

Current Year Programs

Area 2B (Albert Park Detention)

This project will provide improvement for the drainage level of service in the Albert Park area. Funding

will be used to construct drainage improvement systems. The Utility Reserve funds this program in 2014.

Area 14 Upgrades (Lakeview)

This project will upgrade the drainage system in Area 14 to improve the desired drainage level of service in the area. The Utility Reserve funds this program in 2014.

Area 13A (Highland Park/City view)

This program will upgrade the drainage system in Highland Park to improve the desired drainage level of service in the area. The Utility Reserve funds this program in 2014.

Drainage Infrastructure Renewal

The Drainage Infrastructure Renewal Program is currently in progress with funding allocated prior to 2013. The drainage system requires ongoing rehabilitation and upgrading to maintain and improve the level of service and to ensure the system's reliability. This program includes inspections, assessments, relining, replacement, and rehabilitation. The condition assessments may be done in conjunction with scheduled roadway renewal projects or proactively at locations as warranted. The Utility Reserve funds this program.

Dykes, Drainage Channels and Lake Improvements

This program rehabilitates and improves the level of service of facilities such as dykes, channels, streams, lakes and ponds. Periodic assessments, repairs, modifications and improvements are required to ensure the integrity and capacity of these systems. The Utility Reserve funds this program.

Greens on Gardiner Drainage Route

This project provides for the design and construction of a drainage route and storm sewer to service North portions of Green on Gardiner. This project is 100% funded from Utility Servicing Agreement Fees.

Greens on Gardiner Storm Sewer - Green Water Drive from Green Apple Drive to Green Brook Way

This project provides for the design and construction of a storm sewer to service Greens on Gardiner, along Green Water Drive from Green Apple Drive to Green Brook Way. This project is 100% funded from Utility Servicing Agreement Fees.

Harbour Landing Detention Pond (MR12) – Harbour Landing North of Highway No. 1

This project is for the design and construction of a detention pond MR12 in Harbour Landing near James Hill Road and Tutor Way. The project includes the excavation, outlet structure and coarse grass seeding. The project is funded 100% from Utility Servicing Agreement Fees.

Northeast Industrial Development – North Storm Channel Extension

This project is for the extension of the north storm channel. The work includes excavation and coarse grass seeding. This project is 100% funded from Utility Servicing Agreement Fees.

Northeast Industrial Development - Detention

This project is for the design and construction of a detention pond for industrial development East of Fleet Street. The work includes excavation, an outlet structure and coarse grass seeding. This project is 100% funded from Utility Servicing Agreement Fees.

Somerset Development - Detention Pond

This project provides for the design and construction of a detention pond in the Somerset neighbourhood. The work includes the excavation, outlet structure and coarse grass seeding. This project is 100% funded from Utility Servicing Agreement Fees.

Skyview and Northwest Regina - Detention Pond (J) and Drainage Route

This project provides for the design and construction of a detention pond in the Skyview neighbourhood. The work involves excavation, outlet structure and coarse grass seeding. This project is 100% funded from Utility Servicing Agreement Fees.

Future Years Planned Programs

Area 5 Upgrades (Glencairn)

This project will upgrade the drainage system in Area 5 to improve the desired drainage level of service in the area. Funding for this program is provided from Debt (\$4.7 million) and the Utility Reserve (\$1.4 million)

Area 6 Upgrades (Argyle Park)

This project will upgrade the drainage system in Area 6 to improve the desired drainage level of service in the area. Funding for this program is provided from the Utility Reserve.

Area 8 Upgrades (Douglas Place) revised from Assiniboia East

This project will upgrade the drainage system in Area 8 (Assiniboia East) to improve the desired drainage level of service in the area. Funding for this program is provided from the Utility Reserve.

Area 10 Upgrades (Core Park)

This project will upgrade the drainage system in Area 10 to improve the desired drainage level of service in the area. Funding for this program is provided from the Utility Reserve.

Area 1 & 17 Upgrades (North Central & Rosemount)

This project will upgrade the drainage system in Area 1 & 17 to improve the desired drainage level of service in the areas. The Utility Reserve funds this program.

Drainage Pumping Station Upgrading

The City's drainage pumping stations are aging and require upgrading to restore or improve the level of service and to reduce emergency repair costs. This program will include assessment, documentation, prioritization, pre-design, rehabilitation, upgrades and/or replacement of existing pumping stations. The Utility Reserve funds this program.

The Towns Detention Pond and Drainage Route – Primrose Green Dr to detention pond

This project provides for the design and construction of a detention pond and drainage channel or storm trunk main to Chuka Creek in the Towns subdivision. The project includes design and construction for the excavation, outlet and landscaping. This project is 100% funded from Utility Servicing Agreement Fees.

North-East Industrial Lands – Agricultural Bypass Ditch

This project provides for the construction of an agriculture bypass ditch at the location Northeast - East Regina Industrial Lands. This project is 100% funded from Utility Servicing Agreement Fees.

Detention Pond - New Development in Southeast

This project involving excavation, inlet/outlet structures, storm sewer and coarse grass seeding will be constructed in the new southeast development area. The work will be carried out in 2016 requiring \$500,000. This project is 100% funded from Utility Servicing Agreement Fees.

Hawkstone Detention Pond (F) – West of Argyle Street and South of Rochdale Boulevard

This project will construct the detention pond (F) as identified in the Northwest Sector Serviceability Study, located West of Argyle Street and South of Rochdale Boulevard, as part of the storm water management infrastructure for the area. The project includes design and construction for the excavation, outlet and landscaping. This project is 100% funded from Utility Servicing Agreement Fees.

Detention Pond - Future New Development

This project allows for excavation, inlet/outlet structures, storm sewer and coarse grass seeding for future new development. \$500,000 in funding provided in 2016. This project is 100% funded from Utility Servicing Agreement Fees.

Other Utility Projects

Capital Summary (\$000's)	2014	2015	2016	2017	2018	Five Year Total
Capital Expenditures						
1. Other Utility Projects						
- Utility Billing Equipment Replacement Upgrade	-	20	40	20	20	100
- Future Equipment Purchases	-	150	150	150	150	600
- ITS Infrastructure - Utility Portion	325	325	325	325	325	1,625
- Water System Master Plan - System Wide	500	-	-	-	-	500
- City Operations Facilities	-	1,670	3,260	-	-	4,930
- Sustainable Infrastructure - Water, Wastewater & Drainage Studies & Pilot Projects	-	100	-	100	-	200
- Meter Installation Program	750	750	750	750	750	3,750
- Trench Settlement Remediation	300	300	300	300	300	1,500
- Utility Billing System Upgrade	-	-	-	300	-	300
- Linear Infrastructure Contingency fund	1,000	-	-	-	-	1,000
Total Expenditures	2,875	3,315	4,825	1,945	1,545	14,505
Capital Funding						
General Utility Reserve	2,875	3,215	4,825	1,845	1,545	14,305
Service Agreement Fees - Utility	-	100	-	100	-	200
Total Funding	2,875	3,315	4,825	1,945	1,545	14,505

Other Utility Projects

Current Year Programs

ITS Infrastructure – Utility Portion

This program provides for the Utility contribution to ITS projects that support the Utility as approved in the General Capital Program. Funding is provided from the Utility Reserve.

Water System Master Plan – System Wide

This project provides funding for an integrated master plan for the water system. This is a strong recommendation from the OCP. This project is funded from the Utility Reserve.

Meter Installation Program

The City's expanding community requires the installation of water meters in new homes. This program includes the purchase and installation of new water meters for new construction. Funding is provided from the Utility Reserve.

Trench Settlement Remediation

Cracking and settling of sidewalks, curbs, gutter and pavement occur as a result of backfill settlement at watermain work locations, resulting in drainage problems. This program corrects settlement at these locations. The Utility Reserve funds this program.

Linear Infrastructure Contingency Fund

Funding is provided through several capital programs for infrastructure renewal and capital maintenance of the water, wastewater and storm drainage systems. While some of the work in these programs is proactive, some funds are allocated to reactive capital maintenance and emergency renewal. Past practice has required that contingency funding be reserved in each program. This program is intended to provide a single contingency fund to be used for emergency renewal and reactive capital maintenance. The Utility Reserve funds this program.

Future Years Planned Programs

Utility Billing Equipment Replacement Program

In order to obtain readings from AMR meters, the City has deployed a number of hand-held and vehicle-mounted (VXU) radio-read devices. These devices, along with other larger equipment used in the Utility Billing operation, such as curb box locators, are warranted and can be repaired and upgraded for a period of time, but in order to manage upgrades effectively a consistent program is more appropriate. This program is funded from the Utility Reserve.

Future Equipment Purchases

As equipment requirements change within the utility, additional or new specialized pieces of equipment are required to manage ongoing operations. This program is intended to operate as a placeholder for the purposes of planning in the Utility Model and is based on average expected new or specialized equipment purchases based on previous five year history. Funding is provided from the Utility Reserve.

City Operations Facilities

Capital improvements for the design and construction of interim works identified in the Public Works Facilities Master Plan. Also includes funding to provide and renovate interim space to house staff to support the delivery of the capital program prior to major renovations. Funding is provided from the Utility Reserve.

Sustainable Infrastructure - Water, Wastewater and Drainage Studies and Pilot Projects

This project encompasses pilot projects and studies pertaining to water distribution, wastewater collection and stormwater infrastructure. Projects and studies will be used to determine the future viability of new or innovative sustainable solutions to the City of Regina, which may be ultimately incorporated into future development policy, guidelines and specifications. Studies or pilots will be focused within new growth areas and will either be independent or augment new infrastructure construction. Funding for this project is 100% provided from Utility Servicing Agreement Fees.

Utility Billing System Upgrade

This funding is intended to ensure that the Utility Billing system is maintained in a supportable condition and allows for the ongoing review of improved functionality of the system, implementation of selected functionality, as well as required updates to system architecture. This program is funded from the Utility Reserve.

Utility Capital Funding

Funding for the Water and Sewer Utility Capital Program is primarily from the following sources:

- General Utility Reserve.
- Utility Servicing Agreement Fees and Development Levies.
- Federal and Provincial Grant Programs.
- Debt.

General Utility Reserve

The General Utility Reserve is funded through the operating surplus of the Utility. Each year the Utility generates a surplus, a portion of which is transferred to the general operating and capital budgets, with the balance transferred to the General Utility Reserve. The reserve is primarily used to fund capital projects, but is available should there be an operating shortfall. At present, a significant surplus in the General Utility Reserve is required to offset the shortfall in the Utility Servicing Agreement Fee Reserve. The following table provides a projection for the General Utility Reserve.

<u>General Utility Reserve (\$000's)</u>					
	2014	2015	2016	2017	2018
Reserve Balance - Start of Year	82,786	45,866	60,538	74,723	62,181
Net Operating Surplus ¹	2,720	52,307	59,556	59,677	57,593
2013 Capital Projects (formerly funded by debt) ²	(17,000)				
Committed funding for Wastewater Treatment Plant Upgrade				(19,800)	
Capital Program Requirement (in 2013 dollars) ³	(22,640)	(35,845)	(41,112)	(45,432)	(49,300)
Impact of Inflation on Capital Program ⁴	-	(1,790)	(4,259)	(6,987)	(14,112)
Reserve Balance - End of Year	45,866	60,538	74,723	62,181	56,362

Note:

1. The debt reassigned from the GTH is fully due in 2014, resulting in a reduction in Net Operating Surplus for that year.
2. Debt funding of \$23 million was approved for capital work in the 2012 budget but was not required due to delays in spending. A portion of the debt requirement (\$6 million) was eliminated due to subsequent changes to the capital program. The reserve balance is sufficient to fund the remaining \$17 million in required funding, eliminating the need to issue this debt.
3. The 2014 – 2018 Utility Capital Program is presented in current dollars (without inflation). The Utility model incorporates projected increases in revenues and expenditures due to inflation. The net operating surplus reflects future projected increases and as such, the inflationary projection for capital program requirements is also used in this table.
4. Impact of inflation on capital program includes the impact of inflation for all projects funded through the General Utility Reserve or through debt. The impact of inflation on projects funded through Utility Servicing Agreement fees is found in the section on Servicing Agreement Fees and Development Levies below.

Servicing Agreement Fees and Development Levies

Servicing Agreement Fees (SAF) and Development Levies (levies) are pursuant to *The Planning and Development Act, 2007* and are collected when a servicing agreement or development levy agreement is entered into between the City and a developer. The agreements require a payment to the City of a predetermined amount per hectare of land within the development area. The funds are intended to be used towards the construction of infrastructure to support new development.

In the case of utility related costs for development, the City normally incurs the costs of providing infrastructure prior to the full development of an area and then recovers the costs through the development charges as the area develops.

The Utility Model was developed using the Utility Servicing Agreement Fees/Development Levies set for 2013. These fees were set at \$124,842 per hectare of land within the development area. Growth related capital projects funded from Utility Servicing Agreement Fees/Development Levies are eligible as per the *Administration of Servicing Agreement Fees and Development Levies* policy.

Revenue from SAF and levies is recognized when the funds are spent on an eligible project. Historically, capital projects eligible for SAF funding have been undertaken ahead of the funds being available resulting in a shortfall in Servicing Agreement Fees funding. This shortfall is funded through the surplus in the General Utility Reserve. The projections have been based on information provided by the development community, and estimates from Development Engineering for 2013 to 2017 and assume that fees are collected on 80 hectares per year, in accordance with the SAF/Levy rate calculation.

<u>Servicing Agreement Fees (\$000's)</u>					
	2014	2015	2016	2017	2018
Balance - Start of Year	(33,150)	(36,479)	(30,590)	(22,621)	(28,249)
Servicing Agreement Fees ¹	11,331	11,784	12,255	12,746	13,255
Interest applied to negative balance ²	(1,260)	(1,459)	(1,285)	(995)	(1,299)
Capital Program Requirement (in 2013 dollars) ³	(13,400)	(4,265)	(2,775)	(14,625)	(16,145)
Contribution to Capital Payments for Wastewater Treatment Plant				(928)	(1,856)
Impact of Inflation on Capital Program	-	(171)	(226)	(1,826)	(2,742)
Balance - End of Year	(36,479)	(30,590)	(22,621)	(28,249)	(37,036)

Note

1. The projected Servicing Agreement Fees incorporate the approved rates for 2013, and increases in future years for inflation. The capital program requirements also incorporate projected increases due to inflation.
2. If the Servicing Agreement Fee Reserve is in a negative position, interest is calculated at the rate paid by the City for any debt required to fund the negative balance.
3. The Capital Program Requirement reflects an estimated inflation rate applied to capital requirements. The 2014 – 2018 Utility Capital Program is presented in current dollars (without inflation). The Utility model incorporates projected increases in revenues and expenditures due to inflation. The net operating surplus reflects future projected increases and as such, the inflationary projection for capital program requirements is also used in this table.

Federal and Provincial Grant Programs

In 2013, the City of Regina submitted a funding request to PPP Canada for up to 25% of the eligible capital costs for the Wastewater Treatment Plant Upgrade Project. Funding of up to \$58.5 million was approved under this program.

Debt Financing

Section 135 of *The Cities Act* creates the authority to issue debt to finance capital projects. While debt is a source of capital financing, ultimately the cost of the debt (principal and interest) has to be funded through the utility operating budget. The following table is a summary of the outstanding debt and the debt maturing each year.

Current Debt Outstanding (Issued in 2009 and prior years)

The following table is a summary of the current outstanding debt, showing the year of issue and the debt maturing each year.

Schedule of Utility Debt Maturities (\$000's)					
Year	Debt Issues			Total	Per Cent of Total (%)
	\$6 Million May 2004	\$16 Million June 2009	\$43.1 Million June 2009 (GTH)		
2014	600	906	43,100	44,606 ¹	79.5
2015	-	906	-	906	1.6
2016	-	906	-	906	1.6
2017	-	906	-	906	1.6
2018	-	906	-	906	1.6
2019	-	7,846	-	7,846	14.0
Total	600	12,376	43,100	56,076	100.0

Note:

1. The debt reassigned from the GTH is fully due in 2014.

Previously Approved Debt (Unissued)

In 2012, approval was given to issue \$23.0 million in debt. Because of delays in capital investment, this debt has not been required. The projects that were planned to be funded through this debt issue must be allocated funding from the General Utility Reserve.

Planned Future Debt Requirements

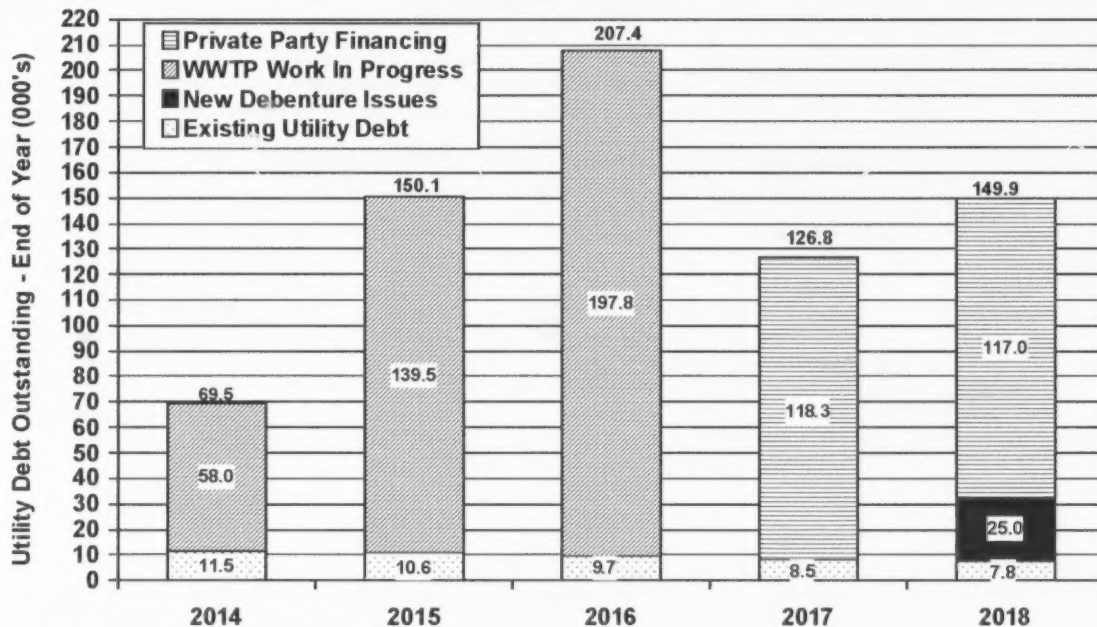
In addition to the debt already approved, the 2014 to 2018 Utility Capital Program is expected to require the following debt:

- \$118.3 million in 2017. This debt will be issued as part of the P3 project through the private partner.
- \$25.0 million in 2018.

The Utility Model includes funding for debt issuance costs and the repayment of projected debt issues based on a twenty year term and an interest rate of 4.6% in 2018.

The future debt requirements are subject to change, as capital requirements in future years may change, the projected cost of requirements could change, or revenues generated from rate increases may change. In addition to the projected debt required to fund the 2014 – 2018 Utility Capital Program, based on current revenue and expenditure projections in the Utility model, there are additional debt requirements beyond 2018. The following graph shows projected utility debt levels incorporating the existing debt and the projected additional debt for 2014 through 2018.

Utility Debt Projections



Typically, the City of Regina completes capital projects using a traditional Design-Bid-Build model. Under this method, capital payments (or progress payments) are made as work is completed. The Wastewater Treatment Plant Upgrade will be completed using a P3 delivery model. Under this model, progress payments are minimal with the majority of the costs paid at completion. While this model limits the City's cash requirement during the construction of the project, the value of the work completed on the project at the end of each year (the Work in Progress), is considered to be a form of debt and is therefore included in the City's debt projections. The majority of the work on the project will be complete in 2016, resulting in almost \$200 million in Work in Progress. On completion of the work in 2017, grant funding from PPP Canada will be applied to the project cost along with a payment from the General Utility Reserve. The remaining balance will be paid through debt issued by the private partner.